RetroMagazine World

future days are back

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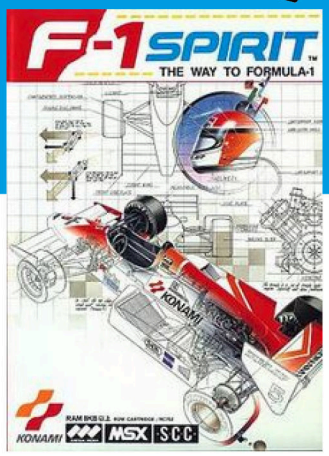
ATARI
The origin of the myth

Commodore 264 Series

ANOTHER WORLD: a scary and magnificent journey

TURBO SPRINT (Amiga AGA)



F-1 Spirit: the way to Formula-1 (MSX)

Turbo Rascal Syntax Error

A complete cross-platform framework for 8/16-bit development

SAINT SEIYA – IL MITO
Knights of the Zodiac!!!

THE STORY

olivetti

When Italy was **Silicon Valley**

- **RetroLiPS** project
- Nobility of a humble flowchart
- Road Hunter **TI99/4A**
- Phantom Gear **(new game)**
- Battle Axe **(new game)**

Olivetti PC 128S

SEGA SATURN:
a fantastic but misunderstood platform!

Més que un Magazine

"Més que un club" (more than a club) is the slogan proudly displayed by Barcelona FC in the stands of its football stadium.

With equal pride we can say that RetroMagazine World is more than just a magazine reserved for a group of enthusiasts.

With all our initiatives (the site, "Press Play Again", etc.) and the presence on the most frequented social networks, it proves to be a community full of life.

The Editorial Board has recently seen an increase in the number of collaborators, starting with Mike "The biker" Novarina, Alessandro Albano and continuing with Francesco Coppola, Beppe Rinella, Christian Miglio (humbly apologizing if we have forgotten someone else worthy of being remembered).

In particular, the young Francesco Coppola will take care of the Atari world, while Beppe Rinella will enrich the articles of games by leaving the patterns of the usual review.

RetroMagazine World is appreciated because it is made by putting heart and soul (or "spirit" as Steve Jobs said).

Other projects are underway, because, just as in football, teams must renew themselves and impose increasingly challenging and stimulating goals in order to stay on the wave.
As RMW is an all-round project with many collaborators, it would be a shame to keep it confined to the magazine alone.

So welcome the RetroLiPS Project of which you will find a detailed explanation within this same issue and especially the official YouTube channel of RMW:
https://www.youtube.com/channel/UCF3lvc_FYyU1lfPMfIFHXMg

The YouTube channel, born from Nith's intuition, is gradually enriching itself with interesting video reviews and could, in the long run, become another vehicle of fundamental content for our group!

At the time we are writing, we are also working behind the scenes for another 2 or 3 goals.
But we will only reveal them later, so as not to spoil the taste of slowly savouring the pleasure of waiting!

RetroMagazine World, "More than a magazine"!

Alberto Apostolo and **Francesco Fiorentini**

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A bit of rarity

(rummaging here and there)

The Karnak MFP810 Calculator

by Alberto Apostolo

Some time ago, I received an old Karnak MFP810 (Multi-Function Printing Calculator) table calculator as a gift as shown in Figure 1.

Karnak SpA was a company in the Republic of San Marino that produced office equipment until the cessation of activities in July 2015 (news appeared on the website www.sanmarinortv.sm on 15 July 2015).

The calculator has a small printer for plain paper (works with an Ink Roller model IR-40T, Figure 2) and incorporates a clock with date in American format mm-dd-yyyy and time in hh-mm-ss format.

The power supply consists of a 6V and 200mA AC/DC transformer.

Alternatively, you can charge four 1.5V LR6/AA/AM3 stylus batteries into a slot at the bottom of the calculator.

The clock is powered by a 3V CR2032 battery, which is accessed from another slot that is always located at the bottom of the calculator (the lid of this slot is locked with a very small philips screw). The calculator allows the four operations with 12 digits, conversions between units of measurement and different commercial calculations (it does not have the square root).

Later I discovered that the MFP810 was nothing more than a clone of the Aurora PR710 calculator (Figure 3).

Fig. 1: Karnak MFP810.

Since I did not find documentation about the Karnak MFP810, I have attached in the Bibliography specifications and user manuals of the Aurora PR710.

Fig. 2: Ink Roller IR-40T.

Fig. 3: Aurora PR710.

Bibliography

[Aur20a] (2020-09-17) retrieved from https://aurora-europe.co.uk/spec_pr710.html

[Aur20b] (2020-09-17) retrieved from https://www.aurora-europe.co.uk/pdf/PR710.pdf

[Aur20c] (2020-09-17) retrieved from https://aurora-europe.co.uk/ib/pr710_uk.pdf

[Aur20d] (2020-09-17) retrieved from https://aurora-europe.co.uk/pdf/setting_time_date_pr.pdf

SEGA SATURN - a fantastic but misunderstood platform!

by Takahiro Yoshioka

The Sega Saturn was the penultimate console produced by Sega before leaving the world of hardware to devote itself exclusively to software production.
A console with a troubled history and its failure, especially outside the land of the Rising Sun, was due to the crazy marketing choices made by Sega, who first tried to chase his rival Nintendo on Megadrive, creating absurd add-ons and then had to face the entrance of the competitor of the time (and winner of the battle)... Sony's first Playstation.

The Saturn was instead a great product, beautiful to see and with the right credentials to break into the market of CD-ROM systems, which would have deserved a better end... In fact, it was withdrawn from production after only 4 years, replaced by Dreamcast.
Sega's machine was the third console produced by the Japanese company, marketed between 1994 and 1998 and the first console equipped with the CD-ROM player, a support that at that time had replaced the cartridges of the 16-bit era.

Already since the launch on the market, he suffered from several problems. The Sega fanbase had been betrayed by the abandonment of the 32x and Mega CD, produced shortly before and poorly supported. The same fanbase which failed to understand its early marketing (surprisingly) and its very high price for the time (it came out at $400 in the US).

To these inexplicable and absurd marketing choices, Saturn also suffered from “structural” limitations.
The 3D processor was added in an advanced state of development, after it became clear that the Playstation would meet the demands of players by introducing a third dimension into the games, second the structure of the two main processors, while being slightly less powerful than the competition, complicated the work of developers, who often preferred to work on other platforms.

Nevertheless, the new Sega home console had interesting arrows on its bow: its 3D controller is one of the first to present an analogue lever, it was extremely well designed and is still one of the most resistant consoles ever produced In pure Sega style it was predisposed to be expanded and some of these add-ons actually introduced features never seen before.
It was equipped with an internal 28kb internet connection system.

PROS AND CONS

Good...
1 - System equipped with one of the best 2D engines ever created.
2 – Porting 2D titles is better than the same on Playstation 1.
3 – Among the most interesting Add-ons was an optional 1/4MD RAM expansion cartridge that gave it greater capacity than its competitor Sony. Thanks to this cartridge, arcade games used to work perfectly on the Saturn, while the Sony machine was forced to cut frames.
4 – The Multi Tap could support up to 10 players at once.
5 - Some exclusive titles were exceptional and were never issued on other consoles even afterwards.

Unfortunately...
1 – Disk access times and uploads were really long, more than on Playstation.
2 – Little memory dedicated to saving data. There were external memory cards but they were expensive and very rare.
3 - The 3D engine could not reach the levels of the competitor Sony and Nintendo 64, especially with the titles developed directly for this generation of machines.
4 - Beautiful exclusives, but few! Many third-party developers preferred to rely on the Sony home system that impressed the most for its simplicity of development and lower costs.

Technical Specifications

-CPU: 2 x Hitachi SuperH 2-32 bits @28.63 MHz
-8 KB[20] first-level cache
-Total performance in MIPS: 25 MIPS (single CPU)
-Motorola 68EC000 @11.3 MHz (Programmable Sound Generator control sub-processor)
-Overall performance in MIPS: 1.5 MIPS
-Graphics Processing Unit:
-VDP 1-32 bits @28.63 MHz (this processor handles sprite and polygons)
-VDP 2-32 bit @28.63 MHz (this processor is responsible for background processing)
-Peak graphics rendering of 500,000 monochrome polygons per second (200,000 with textures and shadows)
-16.7 million colors
-Memory:
-5 Mbyte RAM of non-unified type.
-1 Mbyte SDRAM
-1 Mbyte DRAM
-1,5 Mbyte VRAM dedicated to video processor
-512 Kbytes RAM dedicated to audio processor
-512 KByte CD-ROM cache
-512 Kbytes BIOS ROM
-Sound:
-Yamaha FH1 22-channel stereo
-Storage media:
-Electronic cartridges.
-CD-ROM

Virtua Fighter 2

Saturn Bomberman

Top 5 on Saturn in our opinion:

1 - **NiGHTS into Dreams**: Not being able to count on enough 3D power to recreate a credible gaming world, the Sonic Team opted, in creating Nights into Dreams, for a perfect mix of old 2D gaming experience and innovation.
2 - **Guardian Heroes**: perhaps the best non-arcade 2D title ever made for Saturn.
3 - **Virtua Fighter 2**: the first Virtua Fighter is remembered above all for having introduced 3D in THE 1VS1 hard hits, its porting on Saturn had not been very successful. The second chapter, on the other hand, was a fluid game that was perfectly integrated into home console systems.
4 - **Panzer Dragon Saga**: Released towards the end of the console's life, this RPG is perhaps one of the best ever made for the 32-bit era.
5 - **Saturn Bomberman**: Up to 10 players on screen at the same time... literally devastating. Best Bomberman ever made.

Panzer Dragon Saga

Guardian Heroes

NiGHTS into Dreams

Commodore 264 Series

by Leonardo Miliani

All of us retrocomputer enthusiasts are familiar with the Commodore brand, a company that literally revolutionized the 8-bit home computer market with record-breaking machines like the VIC-20, the first computer to overcome the barrier of one million units sold, and the C64, the holder of the still unbeaten record of the best-selling computer in computer history, with its 25 million units (or so) distributed worldwide during its decades-long commercial life. But Commodore is not only success and glory, it is also a company that released bankruptcy products, which have absolutely not received public approval because of design choices or corporate faults. This second category includes the machines of the infamous 264 Series (see fig. 1).

Fig.1 - Commodore 264 prototype (photo by Babylon4 - source Mediawiki Commons)

Origins of the series

In January 1984 Jack Tramiel, founder and CEO of the Commodore, posed for photographers at the Consumer Electronic Show with two new computers, the Commodore 264 and the Commodore 364 (see photo 2). A couple of days after that event, Tramiel announced that he was leaving the company he founded. Rumor has it that some sources speak of a board of directors held days earlier when he and Irvine Gould, the company's historic financier, came to shore decreeing an insurmountable rupture that led Commodore's founder to other shores. But those computers are not only children of the business choices made under Tramiel's direction but also of the commercial policies of his successors. Unfortunately all unlucky choices.

Anyway, let's go back in time for a moment. It was 1983 and the VIC-20 sold well, thanks to the fact that, due to the price war carried out against the other home computer manufacturers, it only costed $99. The new C64, despite a selling price of just under $600, was slowly gaining market shares thanks to its excellent technical features. Tramiel, however, saw the “Japanese threat" on the horizon. He feared that mid-range computers would sooner or later arrive from Japanese soil that would fit between VIC-20 and C64, removing that market niche to Commodore. For this reason he gave a mandate to start developing a system that would not only have to replace and improve the VIC-20 but that would also must have an equal or even lower price, in order to beat the competition of those computers when they would have come to market. But Japanese computers, however, never arrived because Japanese manufacturers, neglecting the not widely used MSX standard, were mainly dedicated to home gaming consoles.

However, the development of the new computer continued and, as mentioned, the fruits of this work were presented to the press as Commodore 264 and 364 in that January 1984. Everything revolved around a new CPU called 7501,

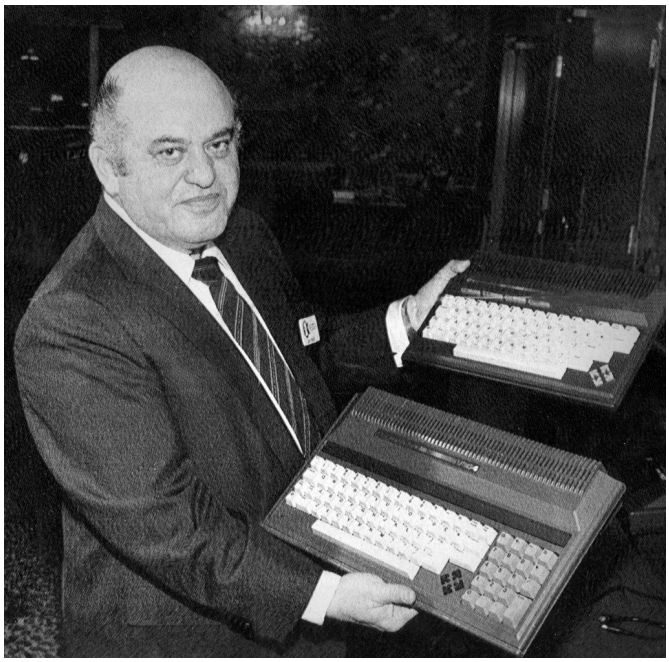


Fig.2 - Jack Tramiel unveils the Commodore 264 and V364 at CES in Las Vegas in 1984 (photo Marty Katz/ baltimorephotographer.com)

Fig.3 - Commodore Plus/4

derived from the 6510 of the C64 but made with a new production process that allowed it to work at a maximum frequency almost double that of its predecessor, reaching up to about 1.8 MHz. On the audio/video sector, the new line of machines echoed the VIC chip philosophy of the VIC-20, that is, a single integrated chip to manage both graphics and sound, called TED (which stands for Text Editing Device), a name with which these computers were alternately known due to the fact that they shared the same chipset.

Models of 264 Series

Let's look at the computers presented to the ESC in 1984. The Commodore 264 had a smaller case size than the VIC-20 and C64, and was equipped with 64 KB of RAM and 32 KB of ROM. This featured an improved version of the Commodore BASIC updated to version 3.5 and enriched with many new commands for sound, graphics, disk management and also for minimal support for structured programming. The 264 project envisaged the possibility of supporting an additional 32 KB of ROM via external cartridges to add programs and features to the system. The TED had the ability to manage a 40x25 character screen of 8x8 pixels in text mode or 320x200 in graphic mode (such as C64) but the peculiarity of this chip was that it could manage the luminance of the 16 base colours, thus obtaining 121 different colours (because black always remained black). However, the sprites were missing, which were responsible, together with the sound, for most of the fortunes of C64. Speaking of sound, the chip had only 2 oscillators and could only generate square waves or white noise, lacking all the sophisticated audio management that the C64 SID was capable of. There were also two models of Commodore 264, named 232 and 216, with respectively 32 and 16 KB of RAM. They were designed to withhold production costs, but they never left the prototype phase at the time of submission to the ESC.
The Commodore 364 was similar to the 264 but presented more interesting innovations, first of all the presence in memory of professional software and the ability to synthesize speech. Aesthetically it had an additional numerical keypad, a “must” for computers intended for professional use (it favoured the insertion of long sequences of numbers) while internally the memory was 64 KB of RAM, with the 7501 and TED as in the other model. The ROM was instead increased to 48 KB, necessary to contain both the BASIC 3.5 and the software used as an integrated speech synthesis module with 250 preloaded words as

standard (externally expandable vocabulary) and it also featured a professional software chosen by the user from several options, including a word processor, a spreadsheet, a database and more. In their initial plan, Commodore would then have marketed several models of 364, each with a different pre-installed program: however, the user could buy the missing programs and use them after loading them from disk.

Fig.4 - Commodore 16

Commodore 16, 116 and Plus/4

As said, some models initially presented or planned did not arrive on the market, but only some of those machines. At the ESC in June, Commodore presented a revised version of the 264, offered for sale under the name of Commodore Plus/4 (photo 3): compared to the computer presented in January, it included a single software package called "3-Plus-1" produced by Tri-Micro and featuring a database, a spreadsheet, a word processor and a graphics generation program. In order to get all the programs in the package into the computer ROM, Commodore had to remove several functions of the package: Tri-Micro later put on sale a floppy disk called "Plus/Extra" for the users to add what had been removed. Reviews of the time provided negative comments about the integrated suite, defining the programs as basically useless due to the lack of integrated features.

At the same time, the Commodore 16, a heavily modified version of prototype 216, was announced and offered for sale. Compared to the original design of the abandoned 264 series, there was no longer any trace of the planned integrated software, not even the "3-Plus-1" package included in the Plus/4. But that's not all. The C16 did not even share the Plus/4 case and, instead, it resumed the design of the VIC-20 and C64, i.e. the well-known "breadbin" shape with a different colour.

Another model of this unfortunate series, called Commodore 116, appeared at the end of the year. Essentially this was a Commodore 16 but a case similar to that of the Plus/4 was employed: unlike the latter, however, it featured a keyboard with poor quality rubber keys, which made typing very difficult.

Faults and bugs

The 264 series computers were created to respond to a specific Commodore plan, namely to replace the VIC-20 with a more attractive machine, release computers for the mid-market and place the company in the business market with a machine also designed for the office thanks to the offer of pre-installed professional software. Almost no target was achieved, however, as the market soundly failed to welcome these machines, for a number of reasons. The Plus/4 had 64 KB of RAM just like the C64 but, unlike that, it also featured a sophisticated system to alternate RAM and ROM (i.e. bank switching) spaces, so that at power up more than 60,000 bytes were available for BASIC programs, whereas only 38,000 were offered by the C64. BASIC 3.5 was also much more advanced than version 2.0 featured in the previous computers: as already mentioned above, it offered a lot of new commands to facilitate the drafting of complex programs thanks to the ability to manage graphics and sound without having to resort to complex sequences of PEEK and POKE as on previous models. Despite this, however, it did not succeed in imposing itself as a gaming machine because TED, although offering the same resolution as the C64 (320x200 pixels) but with a much higher number of colours (121 against 16), did not support sprites. So, if you wanted to create games, you had to resort to character reprogramming, as happened on the VIC-20. The audio section suffered from similar problems: born to be used in a machine designed for the office, TED's audio processing functions had been designed to play simple notes. The chip was not able to handle all the complexities of sound generation and modulation that the C64 SID was capable of. The Plus/4 could not even establish itself as an office machine because the ROM programs could perhaps be suitable for domestic or limited use but certainly could not stand the comparison with other commercial software of superior quality and functionality. The Plus/4 sold a total of 400,000 units, of which just over half in Europe.

C16 suffered from the same issues. Without the integrated programs and equipped with only 16 KB of RAM, it was put on sale as an "educational machine", meaning a

Fig.5 - the little known Commodore 116

learning machine. So it was clear that in Commodore's plans this computer was placed in the low end of the market. Sharing the same chipset as the Plus/4 also turned out to be a computer not appealing to videogamers due to TED's graphic and sound limitations. Also, the low numbers in sales did not even facilitate the development of many games and programs by software houses. Despite the identical case to that of the VIC-20 and C64, the C16 was hardware compatible only with the Plus/4, due to a whole series of new connectors incompatible with those of the previous models: this meant that not only the most popular peripherals such as cassettes but also the simplest and most common joysticks already in possession could not be reused on the new computer but had to be purchased from scratch. A specific floppy drive was built, faster than the one used on previous computers, but in order to use it, it had to be connected via the expansion port. The port was also missing to connect a modem, which oddly enough was present on the VIC-20, the very computer model it was supposed to replace. The C16 was produced in about 600,000 units, mostly sold in Europe and Mexico as cheap gaming machines.

The C116 was even more unlucky. Presented at the end of 1984, when the market had already failed both Plus/4 and C16, only a few tens of thousands of units were sold and almost exclusively in Germany. The keyboard was his real weak point: all the reviews of the time pointed the finger at the poor quality of the rubber keys and the objective difficulty of typing programs.

Reasons for a failure

As seen, the failure of these computers was caused by several factors. On one hand, the objective hardware inferiority if compared to C64, which Commodore executives had underestimated. In fact, they knew that the computer did have lower features than their flagship model, but they thought that the public would still buy the 264 series as they had continued to buy the VIC-20 after the launch of the C64. However, the period and timing of marketing had not been taken into account in this analysis. When the 264 series machines were put on the market, the appearance of 16-bit machines was already beginning, and the 8-bit computers were collapsing in price. The C64, which at the time of launch went for 599 dollars, after 2 years had come to cost less than half. Software incompatibility also weighed on this: apart from the most trivial programs in BASIC, no specific software for the C64 could run on the new machines. And the C64 had a very rich software collection, given the enormous production of the developers made in the 2 years of successful sales. Putting a user to choose between two machines with similar costs but one with superior hardware features and a considerable supply of programs while the other technically lower and with few applications available meant finding the second on the shelves of stores and distribution warehouses. And that was what the Commodore leadership had implicitly done.

Another factor was hardware incompatibility. This had also been dictated a little by hardware manufacturers, who were moving the production of connectors towards smaller sockets and plugs, both to reduce production costs and also to meet the needs of new communication protocols that needed higher quality materials and better technology. The adoption of a completely different set of connectors than those adopted by previous computers forced users who wanted to upgrade from the current machines to buy all the peripherals, with a much higher economic outlay than the cost of the machine alone if the standard connectors had been maintained. Probably if Commodore management had also evaluated this factor, perhaps a larger slice of users would have made the transition, being able to store all the accessories already purchased.

In conclusion, the 264 series was a line of potentially interesting computers but was heavily penalized by questionable economic and constructive choices. Basically, the "could have been but it wasn't" series.

OLIVETTI, when Italy was Silicon Valley

by Mic The Biker Novarina

Olivetti for me, who has always lived in the province of Turin, has always had an incredible charm, the company thanks to which we are here to write and you to read: to us young boys this name made us think of science fiction that arrived in the real world. Olivetti's story makes us understand what we were like and what Italy represented worldwide. And it throws us in the face, like an iron fist, a sad reality, where the tenacious and constant work of our elders has been squandered by our "yuppies" and by a global suicide policy. Our journey begins at the beginning of 1900, with an excerpt from what was the company's birth contract: "In 1908, on the 29th of October in the city of Ivrea and on the spot of Mr. Camillo Olivetti located in the Ventignano e Crosa region, in front of me Gianotti Cav. Happy royal notary registered at the Ivrea Board of Notaries, resident there, with the intervention of the witnesses named below... ". 1908: in the computer field it is comparable to the precambrian era. Obviously the company was not born immediately with the idea of producing computers.

The capital was 350,000 lire, Camillo participated with 220,000 lire consisting of the value of some land and an industrial building. Once he had procured the necessary machinery for the processes that he had in mind, the good Camillo arranged the headquarters of the company. On the roof of the two-storey factory in red bricks was posted a billboard bearing the inscription: ENG. C. OLIVETTI & C. PRIMA FABBRICA NAZIONALE MACCHINE PER SCRIVERE (Ed. first national typewriter factory). At the time, the city of Ivrea was an urban hotspot in the middle of cultivated fields. The Canavese was a large rural area and Ivrea seemed light years away from Turin. To understand the magnitude of the undertaking carried out by Mr. Camillo, let's take the cold numbers and examine them:

Fig. 1 - Olivetti's plant in Pozzuoli

in Turin FIAT was founded only 10 years ago and had 50 workers. The newborn Olivetti had 4 totally inexperienced children to whom Camillo himself taught the basics of mechanical processing and arithmetic.

Adriano Olivetti

The years passed, in that historical period the times to grow a company were very long: there was no obligation to produce, even before opening, to pay what you already have to pay without having opened yet. In 1932 Adriano Olivetti, son of Camillo, became president of the company. Under his guidance the first futuristic machines for the times see the light: in 1940 the first addition machine arrived, while in 1945 the Divisumma 14, released in 1948, was the first writer calculator in the world able to perform the four operations. I want to emphasize the concept of "in the world" in the 1940s: we are talking about something truly epochal, and these two words will be recurrent in Olivetti's past history. Divisumma 14 was the first writer with a negative balance to automatically split. Its operation is very similar to that of today's calculators, it differs in terms of multiplication and division. Multiplication is performed by first setting the first factor from the classic numeric keyboard. The second factor must be entered with the red keypad starting from the right and returning to the left. When finished, press the key with the asterisk, and the result is printed. The peculiarity is that the first factor is printed horizontally, while the second is printed vertically; instead, it is printed in red. The division needs a special procedure. The dividend is normally inserted into the machine, after which the addition bar is pressed. At this point the divider is inserted, being careful to add many zeros in order to align the total of its digits with that of the dividend. Then you pull the sphere of division to the right. The result is printed vertically, and the rest is printed horizontally. Many other calculators were born from this revolutionary model in order to always offer products that kept pace with the growing demands of the market. The one that was probably most profitable for Olivetti was Divisumma 24. It was produced in millions of copies and sold at a price equal to about 10 times the cost of production. The company had become a giant not only nationally. In 1955 Olivetti had about 50,000 employees.

Understanding Olivetti's Thought

Adriano Olivetti was a visionary, he had the gift of anticipating market trends. He believed it was possible to create a balance between social solidarity and profit. The organization of work included an idea of collective

happiness that generated efficiency. The workers lived in better conditions than the other large Italian factories. They received higher wages, there were nurseries and homes near the factory. The employees themselves enjoyed conventions and treatments never seen before. During the breaks they could use libraries, listen to concerts, follow debates, and there was no clear division between engineers and workers: this to make sure that knowledge and skills were available to everyone. To these entrepreneurial qualities he combined a real taste sought after for design: he claimed that the factory needed not only technicians but also people able to enrich the work with creativity. For the aesthetic part of its products, real artists such as Ottavio Luzzati, Marcello Nizzoli and Ettore Sottass were involved.

It is no coincidence that many Olivetti products are permanently displayed at the renowned MoMa in New York as an example of Italian design. I shudder at the thought of how far along his Modus Operandi was. The same factory in Ivrea was built by the architects Figini and Pollini in the mid-1930s. Icons of style and class were the Olivetti stores in New York, Venice, Paris and Buenos Aires, all made by renowned architects. But probably Hadrian's summa work was the factory in Pozzuoli. Designed in the 1950s by Luigi Cosenza, the plant is an example of architectural integration into the natural landscape of the Neapolitan coast. At the inauguration of 1955 Adriano Olivetti stated: "In front of the most singular gulf in the world, this factory has risen, in the architect's idea, in respect of the beauty of the places and so that beauty was of comfort in the work of every day. The factory was therefore conceived to the measure of man, so that he could find in his orderly workplace an instrument of redemption and not a device of suffering".

During this unstoppable expansion the company achieved an impressive number of worldwide successes. In 1959 Olivetti developed the Elea 9003. It is the first commercial transistor computer produced in Italy and one of the first fully transistorized in the world. The project and development are carried out by a small group of young researchers led by Mario Tchou, a young Italian computer engineer of Chinese origin. The machine is entirely made with diode-transistor logic technology and was equipped with multitasking capabilities, being able to manage three programs at the same time. Elea 9003 was marketed in about 40 copies, one of which is located in the ITIS Enrico Fermi institute in Arezzo and is perfectly functional as well as used for educational purposes. The computing power was about 8-10,000 instructions per second and was for a few years higher than that of competitors. The computer had a 20000 position ferrite core memory, extending up to 160000 and, in one memory location,

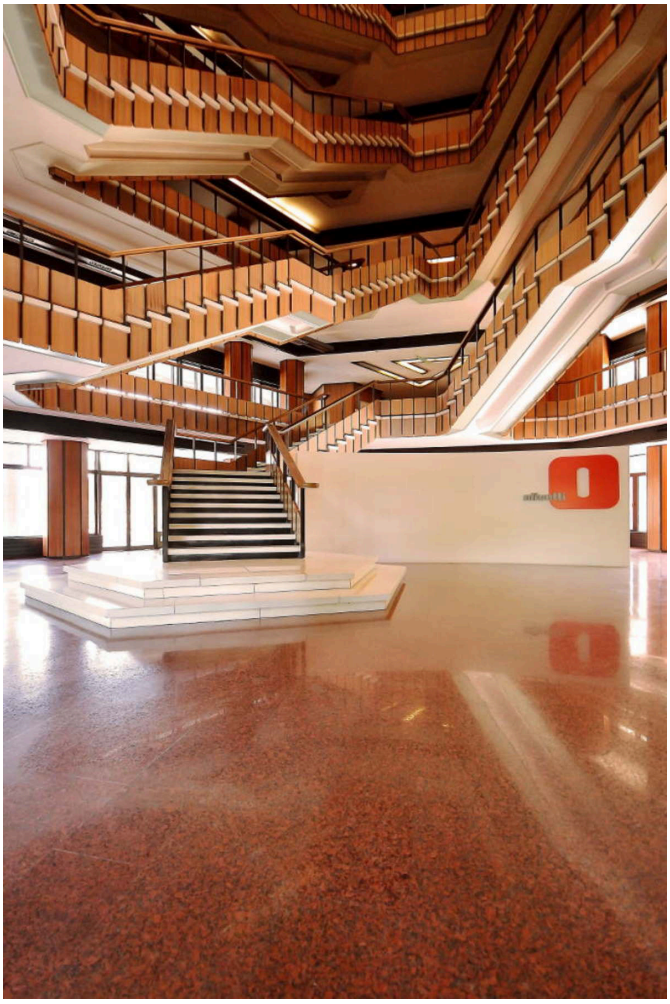


Fig. 2 - Inside the Olivetti headquarters in Ivrea

only one alphanumeric character could be written.
An instruction consisted of 8 characters and was read in 80 microseconds. The computer did not have an operating system, an unknown requirement at the time, and it could be programmed using basic language or machine language. The computer was made up of compact modules very different from the opponents of the time that looked like large cabinets high up to the ceiling. Aesthetically it was curated by Ettore Sottass, who really thought of everything in an aesthetic context. For example, the wiring between the different modules, rather than underfloor, took place in elegant overhead ducts, made with specially designed bar bus: it is, in fact, one of the most important Italian design products of the twentieth century. In the first year of marketing he won the Compasso d 'Oro Award and in the following years he joined the permanent collections of the most important museums dedicated to industrial design around the world.

Adriano Olivetti dies

1960 was a disastrous year for the company. On February 27, 1960, Adriano Olivetti, near Aigle, was caught in a sudden cerebral hemorrhage. Since the autopsy was not performed, the conspiracy hypotheses were wasted and these theories became even stronger following the desecretation of CIA documents: it was confirmed that

the industrialist was investigated by US Intelligence. At the time of his death, Olivetti boasted a presence in all the major international markets and Adriano's untimely disappearance put the company in serious difficulty: he, and his father before him, had managed so far to hold the reins of command firmly.

The majority shareholders were all direct descendants of Camillo, they held 70% of the shares and lacking a strong figure at the helm were born of internal struggles among family members: above all the figure of Roberto Olivetti, Adriano's eldest son. He graduated in 1952 in business administration from Bocconi University in Milan and specialized at Harvard University in Business Administration, becoming CEO in 1962. Roberto takes the helm of the family business assisted by his cousin. In 1963 the American Underwood Typewriter Company was acquired: Olivetti officially became an international industrial giant. This increase led to a large outlay of money not balanced by the crisis in which the company had entered: on the one hand, the advent of some advanced electronic machines made in Japan rendered obsolete Italian ones and on the other hand, most Italian banks, industries and public administration continued to buy American products. A revolution at the top was necessary and this happened when new members entered Olivetti's share capital. They were Fiat, IMI Bank, Central Bank, Mediobanca (then state-owned as IMI) and Pirelli.

Olivetti, General Electric and Programma 101

In 1964, the position of CEO was transferred to Aurelio Peccei, spurred on by the new investors. It was during this period that Olivetti's Electronic Division was sold to the American General Electric: the new management focused on the launch of the new Logos 27, an outdated calculator based on traditional mechanical technology. This product was unable to withstand competition with the first electronic calculators produced by Japanese companies, let alone with an electronic product from Olivetti itself. In fact, far from the light of the spotlight, Roberto Olivetti remained in close contact with the group of engineer Pier Giorgio Perotto, who was developing the experimental project of Programma 101.

The two new machines were presented at the New York fair in 1965. In the grand booth set up for the Logos 27, the P101 was relegated to the background, placed in a back room. As soon as the visitors noticed it, they massively entered the room to observe the product. In the following days the staff of the stand had to improvise an order service to regulate the influx of visitors. Many people had been amazed by the characteristics of the machinery: it was able to perform rather complex operations, for the time being, occupying a small space. The P101 could

vecchiocomputer.com

Fig. 3 - OLivetti M24

stand on top of a desk, while giving you the ability to run complete programs, like the big computers of the time. All this was made possible by Olivetti's progress in electronics. To truly understand the immensity and genius of the project we must remember that the P101 is considered the first programmable commercial "desktop computer", which is why it is also defined as the first Personal Computer in history. The term "personal computer" should not be understood in the sense stated below, since computers of the time were conceived in a very different way.

The machine was equipped with logic functions, jumps, registers, internal memory and the ability to save data and programs on an external magnetic device. It could work on alphanumeric data or only numerical data. Each register of the P101 can contain 24 instructions each consisting of a character and a symbol or a number up to 22 digits or two numbers up to 11 digits. The programming language is alphanumeric and symbolic, similar to that of the Assembler. The P101 automatically handled the floating point and had complete mathematical functions, which was not always present in the large computers that existed until then. The programs were stored on cards approximately 10 cm wide by 20 cm long, which housed two magnetic tracks. The code of a program could use up to 120 instructions stored on one side of the magnetic card: each instruction occupied "1 Byte". Programs consisting of more than 120 instructions could also be used using both sides of a magnetic card. There was also the possibility of using multiple magnetic cards, saving the temporary data of the program running in the memory registers. In the P101 it was possible to create sub-programs that could be loaded by magnetic card after loading the main program, to modify it or enter other data. The memory was organized into 10 registers: 3 of calculation, 2 of memory, 3 of data memory and/or

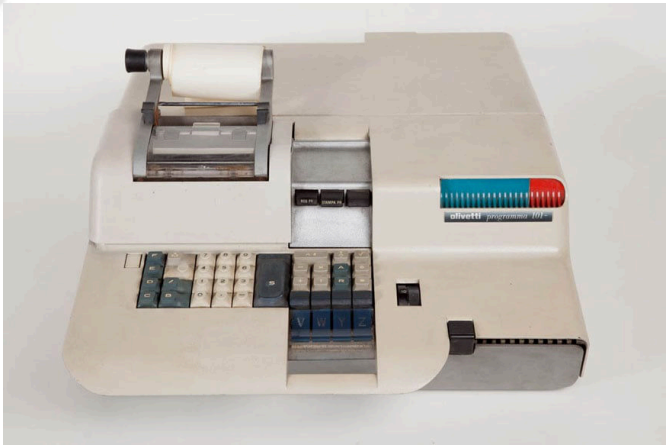


Fig. 4 - Olivetti Programma 101

program memory and 2 reserved for program storage. The machine was not equipped with a microprocessor, as no computer was built until then. Working memory was a magnetostrictive delay line with a capacity of less than a quarter kilobytes. The electronics were made with transistors in TO-18 package and diodes mounted on bakelite headers.

The US market was decided for the launch. Production gained considerable momentum when General Electric expressed its intention to exit the office market, being interested only in computers. This prompted many designers and engineers, who had remained with their entire "office" structure in the new company, to return to Olivetti. The first buyer of P101 was the NBC television network. He purchased 5 copies to compute the election results to be provided to his viewers. The sales were so successful that at the end of 1966 Underwood, a US company controlled by Olivetti, asked to be able to manufacture the machines on US soil in order to supply the offices of the federal administrations of that country. Competition was totally out of line. To try not to get cut off, Hewlett-Packard produced a similar device called the HP 9100A on the idea.

However, having detected the violation of P101's rights, the American company had to pay Olivetti royalty fees amounting to $900,000. Curious was the story of filing the P101 patent. In fact, American laws provide for registration only to people and not to companies. Therefore, it was registered in the name of Mr. Perotto, who later sold the patent to Olivetti at the symbolic figure of one dollar. But, with a healthy dose of humor, he claimed years later that "never was a dollar spent better by a company." In 1967, Roberto became CEO of Olivetti, while Perotto, who also became director of Research and Development in that year, continued to work on portable computers for a decade in the wake of the success of his P101. The market had accelerated incredibly and soon had to face the need to create an operating system for managing increasingly powerful computers.

Olivetti creates Cosmos

For this reason, between 1973 and 1975 the Cosmos operating system was developed: written in Assembly and PL/1, Cosmos anticipated by far what would be the trends of the following decade, through the use of a server-client model. It was installed on TC 800 machines, a very flexible terminal since it was modular, so it was possible for each company to customize it and customize its network according to the needs. In April 1975, at the Hanover trade fair, two new Olivetti personal computers, the P6040 and the P6060, were presented, always designed by Perotto. The P6040 was based on an 8080 processor and ,unlike the P6060, really it was much smaller and more convenient. It had a 2.5 inch floppy and a LED display, two things virtually never seen before on a computer. Unfortunately, the new shareholders relegated Olivetti and his staff to increasingly marginal positions in decision-making. The results of this choice are beginning to show a poor view of the market: marketing in fact did not understand the potential of these two new products, so they were not properly supported and had little success, apart from the European scope in the case of the P6060. But some ace up the sleeve the company still managed to get it. In 1978 Olivetti introduced the ET 101, the world's first electronic typewriter. His success was instantaneous. In the same year a new change took place in the reins of the company: Carlo De Benedetti took over the leadership of Olivetti becoming its new reference shareholder. In those years, although the name enjoyed worldwide fame, finances were shaky and debt was exaggeratedly high.

The new manager managed to lay the groundwork for a bright new period, but it was all an illusion. He was able to expand the production of personal computers and add additional products that the market required. So here come printers, fax machines, photocopiers and cash registers. Meanwhile, the Olivetti Advanced Technology Center (ATC) was founded just two blocks from Apple's headquarters in Cupertino. The LSI chips, the first European Olivetti M20 personal computer, will be designed here. But what seemed like a profitable marriage turned out to be the beginning of the end for Olivetti. Already since the late 1960s, despite the fact that there were unique products in the world, the company accumulated heavy losses and the alliances and new partners that seemed to stabilize the situation was just a semblance.

Politicization sinks the company

The problem has been the exasperating process of politicization. Politicizing means “exchanging favors”: at some point, in the late 1960s, the objective evaluation of the results was replaced with the ability to do favors or reciprocate them.

Olivetti had a professional team of a level never seen before, it was like being in a parallel world: there were motivated people, human relationships that it was rare to find elsewhere. But all this disappears at a certain point and the person responsible for the end is Carlo De Benedetti, who sits in Olivetti for a lucky shot and exploits it for his personal benefit. He was not a man of product but of numbers: on finance he was unrivalled.

He himself paved the way for American conquest in the computer industry and beyond. By the time Microsoft was born, the computer had already been invented and so had Commodore. Then comes IBM with its PC: technologically reliable and distributed worldwide. De Benedetti thus makes a decision: rather than taking his resources and skills that he did not lack in the company and working in this direction, he decides not to develop the software for M20, a technically impeccable computer. He chose to entrust the development of the operating system to an external company, which would later become Microsoft with the young Bill Gates.

The error was the operating system. In fact, they imposed a strict decision: the operating system would be closed: it was Olivetti's point of no return. While the company was negotiating acquisitions and mergers, the head and all the management of American Olivetti resigned. So they sent Mr. Franco Tatò to temporarily fill that position while waiting for a new registered letter to be inserted. But Tatò was one of the last men still produced at work and made a decision that was not understood: for 50,000 dollars he bought a simulator with an infinite baggage of programs and loaded it on top of an M20, which was certainly very slow but finally had programs.

At that time Simone Fubini, also from Turin, designer of the Olivetti mainframe, became General Manager. Fubini starts working and immediately understands the internal problems. With a small group of designers he had developed an IBM compatible computer, a copy of the IBM PC: they called it M24. They announced it on the market as IBM compatible using the Microsoft operating system and with a spectacular boom sold more than 750,000 in a year. It was a huge success as a result of partnering with AT&T: M24 adopted the powerful Intel 8086, with a clock speed of 8 or 10 MHz, a 16-bit data bus, and the ability to increase its performance by decreasing the refresh rate of memory via software.

Produced since 1983, in one of the typical configurations it cost about six million Lire as of January 1986. It was possible to choose the hardware and software configuration, from 128 KB to 640 KB of RAM, from a two-drive floppy disk drive or the hard disk. You could also choose from

Fig. 5 - OLivetti Elea 9003

the great green phosphor Hantarex monitor in colour models. There were more possibilities for operating systems: among them was Microsoft's MS-DOS 2.11, with the GW-BASIC and related meticulous manuals. M24 could use the powerful and universal UCSD p-System, a multi-platform, semi-compiled Californian operating system (like Java), which was similar to Unix. Later, M24 was the first personal computer in history to use the certified UNIX operating system, specifically the AT&T Xenix version. At the time it was an excellent machine, outperforming only Apple with the Macintosh and Commodore with the Amiga 1000.

A success as a tombstone

It seems a paradox but the success of this machine decreed the end of Olivetti as we like to remember it. A sum of enormous managerial mistakes that have in fact given the cultural baggage of a generation into the hands of the Americans. The Olivetti case should be studied today not only to remember its founder but to understand how the decay of a management has played a decisive role in sinking a reality that could have made Italy the true Silicon Valley.

Over the following years Olivetti made increasingly varied alliances to move towards other entrepreneurial activities that in the end could only lead to a result: failure. Piece by piece, letter by letter the name of this Italian dream has fallen. The dream and everything that a past generation has done remains intact: a dream made of "first in the world" products that unfortunately only history will be able to remember.

Olivetti PC128S

by Proteus075 and Carlo Concari

Scenario: Italy in 1987, imagine you are parents and have at home a brat who attends middle school. For some time now, thanks to the various media campaigns and TV, you have been harassed to buy him a computer. What are you doing? By the 1980s, home computers had reached their peak and a number of brands and models, all largely incompatible with each other, succeeded each other on the market.

The most widespread and cheap was Commodore 64, but word was it was old enough and definitely didn't look like a serious computer for your kids to study with. The Commodore had also recently introduced Amiga that was spoken of very well, but its cost was the equivalent of an average monthly salary (monitor excluded).

There were also IBM PCs, but they were expensive and widely used in work and industry. The glorious Olivetti at home has therefore well thought of filling this market gap by introducing the Olivetti Prodest PC line.

Fig. 1 - Olivetti PC128S

Among Prodest, PC128S seems like the ideal compromise. It is not cheap, but with the green phosphor monitor it still falls below the psychological amount in Lire with 6 zeros threshold . It has 128kB of RAM and computer and video writing programs included.

With its eye-catching and bright "two piece" design (central drive inside the keyboard + power drive with built-in floppy disk) it immediately stands out as a serious machine, certainly not a toy and even supports peripherals like printer and mouse!

He was not as long-lived as other 8-bit home computers but sold relatively well in Italy during the late 1980s, gaining a small but affectionate array of fans. The problem was that having been produced at the dawn of the 8-bit era, the PC128S is one of the most advanced machines of that time.

To better understand the history of this glorious PC, however, we must take a step back at the beginning of that decade and move to England. In the early 1980s the management of the BBC, British public television, realized that the digital revolution was beginning and decided that the public television service could not be left behind.

In 1981 the BBC Computer Literacy Project was born, whose backbone would be a series of television broadcasts aimed to disseminate computer science culture to the general public. However, there was a fundamental ingredient missing: a standard machine on which studio guests and people at home could get their hands to develop programs and simple games. The BBC, therefore, drew up a series of minimum specifications that the chosen machine would have to comply with in terms of graphics, sound and computing capabilities, and launched a sort of public tender aimed at computer developers.

Several companies responded to the call, but almost none were able to propose a machine that respected the BBC's technological specifications, which were quite stringent

Fig. 2 - BBC Microcomputer System

Fig. 3 - BBC Master Compact and Olivetti PC128S

at the time. Not even the ambitious Sir Clive Sinclair, a character well above the line, founder of Sinclair Research, the manufacturer (among others) of ZX Spectrum.

Among the companies that responded to the BBC call was the semi-known Acorn Computers in Cambridge, which since 1980 had been marketing a home computer called Acorn Atom. Acorn showed the BBC a prototype of the successor to the Atom, codenamed Proton. Based on the MOS 6502 microprocessor and equipped with interfaces for storage on cassettes or 5 1/4" floppy disks, with a few modifications the computer proposed by Acorn reached all intents and purposes and exceeded the specifications dictated.

BBC signed with Acorn the contract for the official supply of machines for the Computer Literacy Project. That's the way BBC Microcomputer was born. Strengthened by BBC sponsorship and popularized by television broadcasts such as "The Computer Programme", the BBC Micro, or Beeb as it was nicknamed, could only be a success in the UK. In 1984 it was present in 80% of English schools, an entire generation of English computer scientists and programmers got bones in school in the 80s on Acorn machines.

It is said, however, that beautiful things do not last, and the crunch came in 1985. With the BBC's thrust weakened, Acorn machines were struggling to maintain their market share due to higher costs than their competitors (SINCLAIR and Commodore among all). Risky commercial choices and the failure of the assault on the American market soon caused serious financial problems. This led Acorn to seek buyers, and on 20 February 1985 Acorn signed an agreement with Olivetti.

In September 1985, Olivetti controlled 79% of Acorn's shares. Thanks to the injection of Italian capital, Acorn was able to complete the development of the successor to the BBC Micro, called BBC Master 128, which came out in February 1986 and achieved considerable success in the United Kingdom, despite the low cost. The Master series was soon enriched with other models, including the Master Compact, a reduced and therefore inexpensive version of the Master 128. At the same time, Olivetti wanted to launch its own line of home computers on the Italian market. He chose to market the Master Compact by simply changing its name and external livery, leaving the form and technological content unaltered.

The BBC Master Compact italian version is precisely the PC128S! While the BBC Master Compact sold few copies in the UK and proved to be a half-failure, the PC128S was a success in Italy. It was one of three machines marketed under the sign Olivetti Prodest, with the unmistakable symbol of the pyramid. The first PC of the Prodest series, released in early 1986, was the Olivetti Prodest PC 128, clone of the French Thomson MO6. With a launch price

of 380,000 lire and a built-in cassette drive, it was aimed at the low-cost home computer market, and had nothing to do with the Acorn line, with which it was totally incompatible. In the same year, the PC128S immediately followed, which despite the simple addition of an "S" was, as we have seen, a completely different machine; this did not fail to create some confusion. The following year PC 1 was released, an IBM compatible PC based on NEC V40 processor with 4-color VGA graphics, aimed at the home and semi-professional market.

After this historic introduction, we are now at the end of 1986. The PC128S faces the market, and immediately gets good sales feedback. The standard equipment includes the central unit, the power supply unit with a 3.5 "floppy player to which a second reader can be added, and the Olivetti MM 1200 12-inch green phosphor monitor or the MC 1400 14-inch colour monitor.

Fig. 4 - Screenshot from the Welcome disk

The standard software included the Welcome Disk, on which two games were placed, several utilities, some tutorials, the video writing program View and the spreadsheet VievSheet, preface the modern MS Excel.

It also included a 230-page paper guide illustrating the use of the machine, View and ViewSheet applications, operating system commands, and the early basics of BBC BASIC. The PC128S is based on the 65SC12 2MHz processor, an improved version of the MOS 6502 but compatible with its predecessor. The generous 128 kb of RAM and 64 kb ROM make it one of the most powerful 8-bit machines. The graphics, based on custom chips developed by Acorn, can handle up to 20 kb of video memory. The resolution can be up to 640x256 two-color pixels, 320x256 four-color pixels, or 160x256 8-color pixels. One of the major limitations, which mainly affects games, is the possibility of generating only 8 different

Fig. 5 - Thrust

physical colors, obtained by combining the presence or total absence of each of the three primary colors (red, green, blue).
While this is not a major problem for abstract visualizations such as spatial setting games, the impossibility of generating colors such as orange, pink, or gray, and in general all the colors obtained with half-tints of one or more of the primary colors, makes it difficult to visualize more realistic scenarios or human figures. Cheaper computers like Commodore 64 didn't suffer from this limitation.

The sound is based on the Texas Instruments SN76489 chip, is monophonic, and includes three music channels and a white noise generator. The speaker is included in the central unit/keyboard. The 64 kb ROM includes the Acorn MOS 5.1 operating system, the ADFS disk storage system, which can handle 640 kb dual-density floppy disks with recursive directory tree, and the BBC BASIC. The latter is considered one of best Basic dialects in the market (see RetroMagazine #7).

In addition to being equipped with floating-point arithmetic for scientific calculation with an accuracy of 10 decimal places, there are primitive graphics (lines, rectangles, circles...) and, above all, a built-in assembler: within a program in BASIC you can easily insert Assembler code with a few commands that can be executed to speed up critical parts of the program. A peculiar feature of the PC128S, inherited from its BBC Micro ancestor, is the presence of a video mode, called MODE 7, based on Teletext technology, the same used for displaying information pages on TV such as the Rai Televideo service.

When this mode is activated, the internal circuitry switches off Acorn graphics chips, leaving the generation of graphics to the Mullard SAA5050 chip, the same one used in TVs

Fig. 6 - Olivetti branded software

for the generation of Teletext screens. Teletext mode allows multicolor block text and primitive graphics to be displayed using only 1 kb of video memory.

Olivetti's catalog of PC128S software includes less than a hundred titles, most of which are Olivetti's licensed reissues of Acorn's BBC Micro software.

There are application software such as Font Editor or Music System, alternative programming languages to BASIC such as Logo, Pascal or Prolog, single games such as Thrust, Ravenskull, Revs (a very accurate driving simulator for the time, written by Geoff Crammond himself who will later produce Formula One Grand Prix for PC and Amiga) or compilation of old games such as the Super Arcade series (five compilations of two games each), The Superior Collection (two compilations of eight games), Blue Ribbon (two compilations of five games), or the Play It Again Sam series, released until the first half of the 90s.

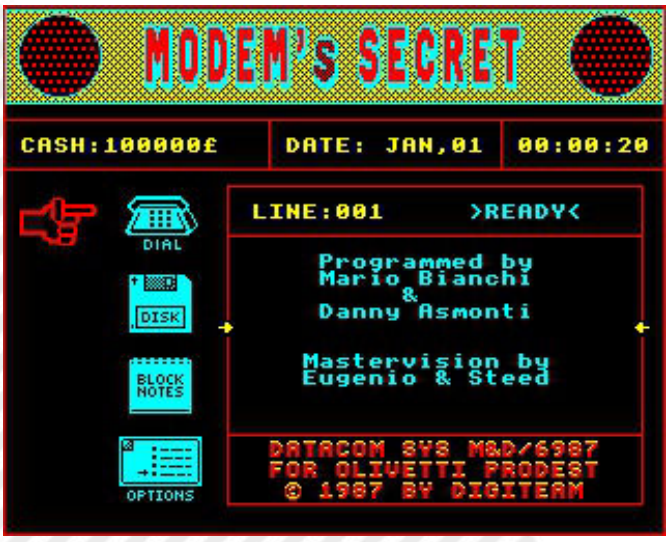


Fig. 7 - L'avventura Modem's Secret

There is at least one game written specifically for PC128S by an Italian team: it is called Modem's Secret, it is written entirely in BASIC, and it is a very innovative textual adventure for the time it was released. The player impersonates an investigator who investigates some misdeeds by browsing for clues between databases, BBS and telecommunications networks.

The original Olivetti games for the PC128S are quite scarce compared to the amount of titles available for more popular machines such as the Commodore 64, the ZX Spectrum or the Amiga. But why, if there are at least 2,000 games officially released for BBC Micro in the UK, and if the PC128S is compatible with its predecessor, are there so few games for the PC128S? The problem stems from the fact that, although the two machines are very similar, the compatibility between the BBC Micro and the Master Compact/PC128S is not 100%, so most games cannot be transferred directly from one machine to another, but need more or less complex conversions. The differences mainly concern the handling of calls to the operating system, the display of non-standard characters, and the joystick, which in the BBC Micro is analogue type, while in the PC128S is digital and is based on an Atari-compatible interface.

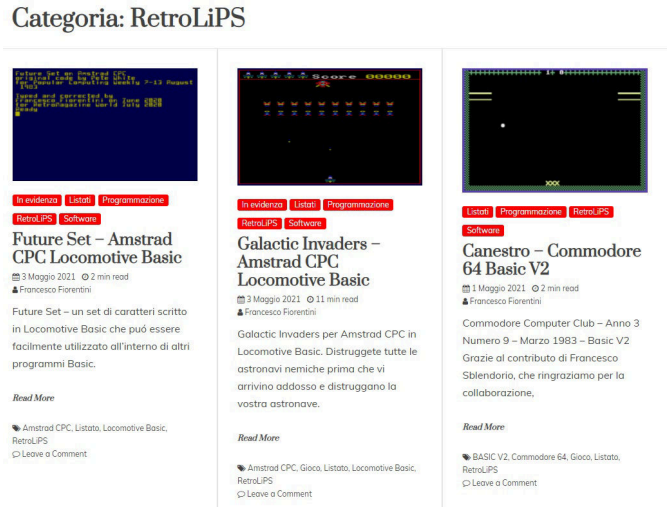
If you own or have owned a PC128S and this article has made you homesick for your old 8-bit friend or if you are simply curious about this machine, you can contact the PC128S Italia group by writing an email to: **proteus075@gmail.com**

RetroLiPS project

by Francesco Fiorentini

I am very happy to officially announce the creation of an area dedicated to the RetroLiPS project on the RetroMagazine World website.

RetroLiPS is the acronym for **Retro Listings Preservation Society**, a project dedicated to safeguarding the listings created for 8 and 16 bit machines.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As far as software is concerned, there are already dozens and dozens of sites that archive and catalogue the programs of the '80s and '90s, but as far as listings are concerned, there is still no serious project dedicated to their preservation. Listings in paper magazines or in books and publications from the 1980s, are destined to remain relegated in the scans of these pages if no one types them... What we want to do is bring these programmes back to life and make them available to everyone for fun and educational purposes.

Obviously we will not be typing those listings line by line, also because it would take a lifetime to do so and we would risk not completing this task. Through OCR (Optical Character Recognition) software, we will try to acquire, in the best possible way, the listings from the aforementioned pages. Obviously, the OCR process is a great help, but unfortunately, the number of errors introduced, due to the incorrect interpretation of some characters, means that much of the work is still manual. The incorrect characters must be corrected, the program must be tested and some codes must be completely rewritten (it's the case of the Commodore 64 screen codes...).

A long and tedious job, but in the end it pays for the effort made. Is it worth it? In our opinion, it definitely is!

Just old listings?

Is the project reserved only for listings taken from historical publications? No, the project is open and ready to host all listings, including modern ones, as long as they are somehow linked to the retro world. So welcome listings for all 8-bit and 16-bit machines (C64, VIC20, MSX, Spectrum, TI99...) or a bit more niche languages (AMOS for Amiga, STOS for Atari ST, Forth for Jupiter ACE...). These programs are probably already available online, it is true, but without a real archive they are just a drop in the sea magnum of the internet. Hence the added value of the RetroLiPS project: a real archive of all the retro code.

We need you... Today more than ever!

As you may have guessed, this is an ambitious project that will need all the help it can get to the success it deserves.

Currently we have already obtained collaboration from **Francesco Sblendorio** and **Ermanno Betori**.

Francesco has provided US with a series of **BASIC** listings for **Commodore 64** published in the famous Italian magazine **Commodore Computer Club**.

Ermanno, on the other hand, provided us with several **BASIC** lists for the **TI99/4A** computer taken from several magazines of the time.

However, typing lists is only part of the work that revolves around RetroLiPS.

Another fundamental part is the cataloguing and creation of posts within the RetroMagazine World website. Currently this task is carried out alongside all the other activities that revolve around the RMW world, so a real manager is missing. If anyone wants to take over this role, please contact us, the retrocomputing community will be eternally grateful to you.

In addition, in the long term this project could get its own space with a dedicated site with lots of databases, a search engine and...

If anyone would like to help us realize this project, again, RMW's doors are as always open and inclusive.

Nobility of a humble flowchart

by Alberto Apostolo

Flowcharts represent an intermediate step between developing an algorithm and drafting a program [FP83]. They allow you to graphically represent the sequence of operations that make up the algorithm and are characterized by the expressiveness and ease with which they can be translated into programs (after choosing the programming language).
A flowchart consists of appropriate symbols joined together by oriented segments indicating the sequence of operations (described within the symbols) and does not contain declarative instructions.
The geometric shape of the symbols is coded according to ISO 5807:1985 and Figure 1 shows the most frequently used symbols with their meaning. I remember that in School in the 80s of the 20th century, owning a plastic stencil to draw flowcharts had become a status-symbol among computer science students (Figure 2).
However, there are no constraints on symbol sizes that are large enough to contain the description of the operation (example in Figure 3).

Generally, a flowchart has only one beginning and one end. The direction of flow should be interpreted from left to right and from top to bottom.

Nowadays, stencils are no longer used (replaced by appropriate software) and, to briefly describe a procedure, we resort to a kind of pseudo-coding full of keywords belonging to the language with which the source code will actually be written.
Personally, I've still seen flowcharts used to describe chains of complex batch procedures.
One tool that has supported flowcharts for many years is the Unified Modeling Language used in the R.U.P. (Rational Unified Process) design method. U.M.L. was developed in 1996 by Grady Booch, Jim Rambaugh and Ivar Jacobson. It consists of an organized collection of related diagrams consisting of graphical elements with strongly defined meaning and textual elements. The latest version is version 2.5 of 2015 (www.uml-diagrams.org).

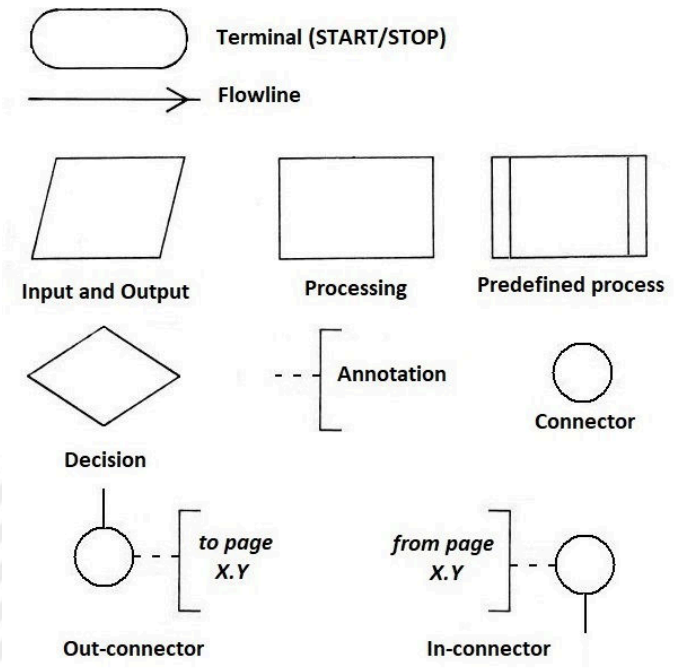


Fig.1

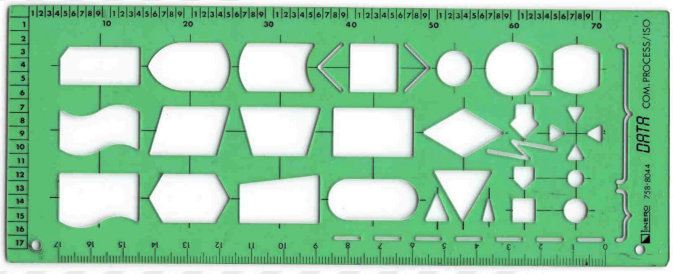


Fig.2

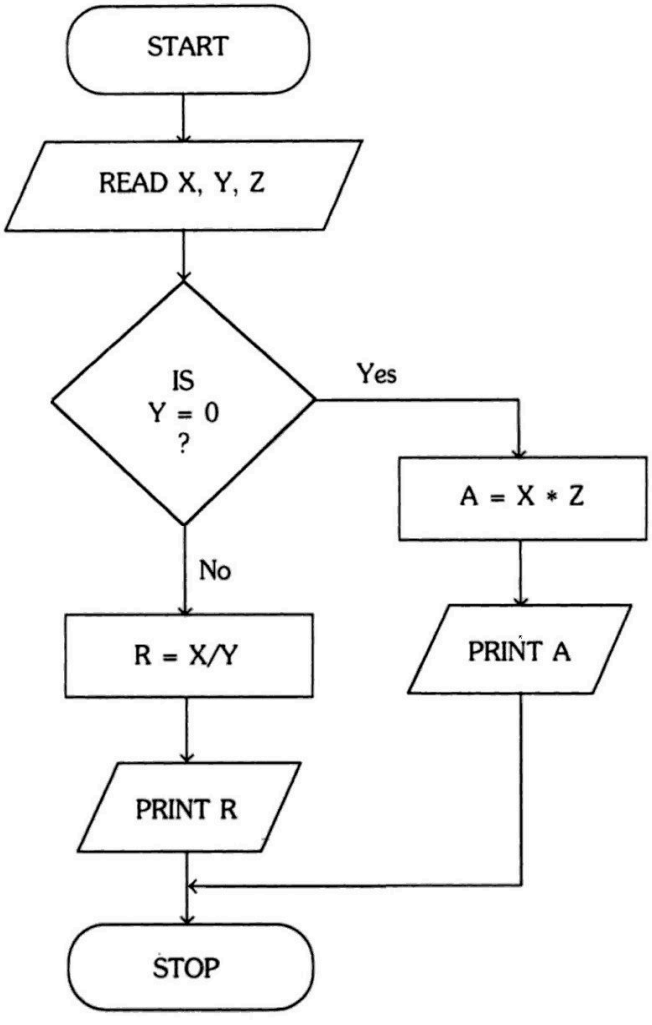


Fig.3

The origins

The idea of using symbols and geometric shapes to represent and share human thought dates back to ancient times (graffiti, hieroglyphics, etc.).

More recently (1921), "Process Charts" written by Frank and Lillian Gilbreth (Figure 4) was published, with the purpose of offering a tool to visualize a work process and improve it (Figure 5 shows a part of a diagram and Figure 6 lists the symbols with their meaning [GG21]).

The use of this instrument was later spread by Allan H. Mogensen. Art Spinager (Mogensen's pupil) introduced him to the multinational Procter & Gamble while Ben Graham made some adjustments when he was a director of the Standard Register Corporation [Char11].

The BPMN (Business Process Model and Notation, Figure 7, [All16]) can also be considered to belong to the Gilbreth family of diagrams.

Fig.4: Frank and Lillian Gilbreth

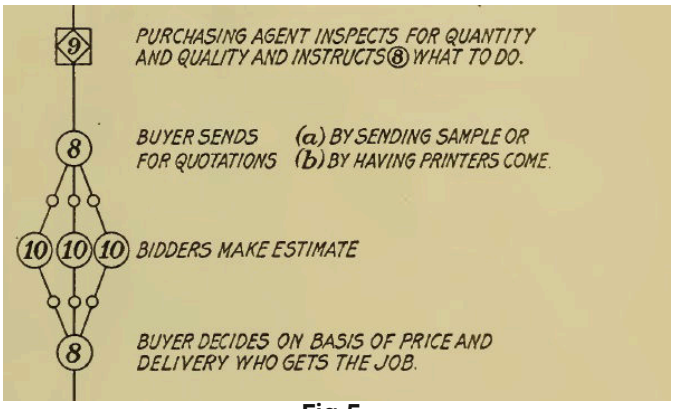

9
PURCHASING AGENT INSPECTS FOR QUANTITY AND QUALITY AND INSTRUCTS (8) WHAT TO DO.
8
BUYER SENDS FOR QUOTATIONS (a) BY SENDING SAMPLE OR (b) BY HAVING PRINTERS COME.
10 10 10
BIDDERS MAKE ESTIMATE
8
BUYER DECIDES ON BASIS OF PRICE AND DELIVERY WHO GETS THE JOB.

Fig.5

STORES REQUISITIONED
STORES BOUGHT.
STORES RECEIVED
SEVERAL KINDS OF COMPONENTS – NOT DESIRABLE TO LIST INDIVIDUALLY
WORKED MATERIALS REQUISITIONED.
WORKED MATERIALS ORDERED
WORKED MATERIALS ON HAND.
MERCHANDISE IN STORAGE READY TO SHIP.
STORAGE AS PART OF PROCESS
PERMANENT FILE OF ANY DOCUMENTS OR MATERIALS.
TEMPORARY FILE OF ANY DOCUMENTS OR PAPERS
(38) OPERATION SYMBOL – WITH NUMBER, SIGNIFIES OPERATION NO.38 OR BY OPERATOR NO.38
(38) MOVED BY OPERATOR PERFORMING OPERATION NO.38
(M) MOVED BY MAN.
(m) MOVED BY BOY
M ○ B MOVED BY MESSENGER BOY
(E) MOVED BY ELEVATOR
(T) MOVED BY PNEUMATIC TUBE
(C) MOVED BY CONVEYOR.
(C) GRAVITY – MOVED BY GRAVITY CONVEYOR.
(C) BELT – MOVED BY BELT CONVEYOR.
(K) — MOVED BY TRUCK.
(K) ELECTRIC – {MOVED BY ELECTRIC TRUCK (SUBSTITUTE – GASOLINE, HAND, LIFT, AS CASE MAY BE.)
(P) — INFORMATION OR MESSAGE MOVED BY TELEPHONE.
(L) — MOVED BY MAIL.
INSPECTION FOR QUALITY.
INSPECTION FOR QUALITY BY SEEING.
INSPECTION FOR QUALITY BY SMELLING.
INSPECTION FOR QUALITY BY HEARING.
INSPECTION FOR QUALITY BY TASTING.
INSPECTION FOR QUALITY BY FEELING.
INSPECTION FOR QUALITY BY KINAESTHESIA.
INSPECTION FOR QUANTITY.
INSPECTION FOR QUANTITY BY {WEIGHING. WEIGHT COUNTING.
INSPECTION FOR QUANTITY BY COUNTING.
INSPECTION FOR QUANTITY BY DRY OR LIQUID MEASURING.
INSPECTION FOR QUANTITY BY SEEING {IS THERE AT LEAST ENOUGH? IS A PIECE MISSING FROM TRUCK OR PACKET?
INSPECTION FOR QUANTITY BY AUTOMATIC COUNTING.
INSPECTION FOR QUANTITY AND QUALITY (QUANTITY MOST IMPORTANT).
INSPECTION FOR QUALITY AND QUANTITY (QUALITY MOST IMPORTANT).
OVERINSPECTION FOR QUANTITY.
OVERINSPECTION FOR QUALITY.
INSPECTION FOR QUANTITY ON EXCEPTION PRINCIPLE.
INSPECTION FOR QUALITY ON EXCEPTION PRINCIPLE.
OVERINSPECTION FOR QUANTITY ON EXCEPTION PRINCIPLE.
OVERINSPECTION FOR QUALITY ON EXCEPTION PRINCIPLE
INSPECTION FOR QUANTITY AND OPERATION PERFORMED SIMULTANEOUSLY.
INSPECTION FOR QUALITY AND OPERATION PERFORMED SIMULTANEOUSLY
INSPECTION FOR QUANTITY AND QUALITY AND OPERATION PERFORMED SIMULTANEOUSLY (QUANTITY MOST IMPORTANT).
INSPECTION FOR QUALITY AND QUANTITY AND OPERATION PERFORMED SIMULTANEOUSLY (QUALITY MOST IMPORTANT).
NO.2 4-65
BLANK FORM USED – INDICATES NO.2 COPY OF FORM 485; IF THERE IS BUT ONE COPY OF FORM MADE, FORM NUMBER APPEARS IN CENTER OF BLOCK.
DAILY EXCHANGE REPORT
REPORTS NOT HAVING FORM NUMBERS WILL HAVE BRIEF TITLE WRITTEN IN BLOCK
A SINGLE DEPARTMENT USED MORE THAN ONCE.
BROKEN LINES INDICATE PROCESS OUTSIDE OF THE DEPARTMENT CHARTED – USED ON DEPARTMENTAL CHARTS.
PROCESS WITHIN THE DEPARTMENT IS CONNECTED WITH CLOSED LINE.

Fig.6

The transition from "flow diagram" to "flowchart" in the nascent IT

The first print showing the use of "flow diagram" in the context of electronic calculation can be found in a 1946 report written by Haskell Curry and Willa Wyatt (Figure 8). The report describes a method for calculating reverse interpolation on ENIAC [Ens16].

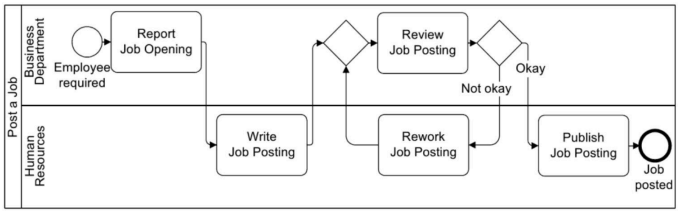


Fig.7

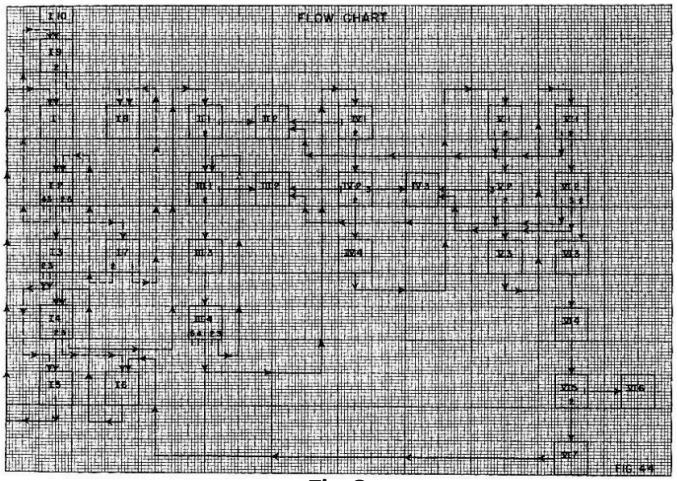


Fig.8

However, in a later document Curry reported that the original idea of drawing a diagram was to be attributed to John von Neumann and Herman Goldstine. Figure 9 shows an example of the diagrams of Goldstine and von

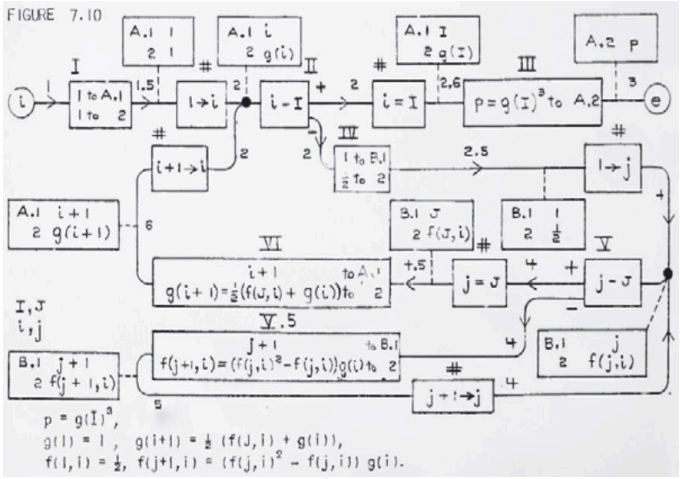


Fig.9

Frank Bunker Gilbreth was born in Freeport, Maine, United States on July 7, 1868. After finishing high school, although he had admission to the Massachusetts Institute of Technology in his pocket, he decided to study mechanics in a more practical way and found work as a builder in a construction company. Thanks to his abilities he quickly made a career, obtaining promotion to superintendent at the age of 27. Looking at the builders' work, Gilbreth posed the question of how to reduce labor fatigue by reducing the number of individual movements. Gilbreth's studies of motion optimization were in contrast to F.W. Taylor's studies of time optimization, and it took mediation by mutual friend Henry Gantt to recognize their complementarity. During World War I, Gilbreth served as a senior officer in the U.S. Army as an efficiency expert. Following the death of Taylor (1915) and Gantt (1919), Frank Gilbreth became a prominent figure in the scientific organization of work but died suddenly of a heart attack on June 14, 1924 in Montelair (New Jersey, United States) while preparing a conference for the First International Management Congress. His wife Lillian, who was collaborating in his work, took part in the conference in her place.

Lillian Moller was born in Oakland, California, United States on May 24, 1878. Daughter of an influential businessman, she graduated in 1903 in English Literature from the University of California at Berkeley with a thesis on the poet Ben Johnson. After graduation he took a year off where he travelled around Europe and during that time he met Frank Gilbreth, marrying him in 1904. To help her husband, she later received a PhD in Psychology from Brown University in Rhode Island. Due to her husband's sudden death in 1924, she had to take care of the large family alone (12 children, 6 boys and 6 girls). She also had to rebuild her husband's business network, working as a government consultant because numerous employment contracts had been cancelled. She served under several Presidents (Hoover, Roosevelt, Truman, Eisenhower, Kennedy and Johnson). In the 1960s she was known as the American First Lady of Engineering, continuing to write and teach. He died in Phoenix, Arizona, United States on July 2, 1972.

Mr. and Mrs. Gilbreth represented a remarkable example of an emotional bond combined with a professional partnership. You can consider the pioneers of what is now called Ergonomics, the science that studies the work environment by identifying solutions suitable for the needs of workers and for production at the same time. In the 1920s they had discovered that the arrangement of the work environment influenced human effort. Also at that time, they had taken care of the reintegration of war-torn maimed people into work. For Gilbreths , successful management must be human-centred and not work-centred (and in this there is a divergence from Taylor's thinking). Some studies by Lillian Gilbreth on motivation and performance have anticipated the work of psychologists Abraham Maslow and Herbert Simon by decades.

Neumann in their treatise "Planning and Coding of Problems for an Electronic Computing Instrument" of 1948. By the late 1940s, the use of flow diagrams had been adopted by the new Eckert-Mauchly Computer Corporation (soon to become the UNIVAC division of Remington Rand). In 1950 Grace Hopper and Betty Holberton introduced what they called "flow charts" (and then "flowcharts") into corporate programming courses at the EMCC.

The first standardisations

Beginning in the 1950s, several institutions attempted to develop their own graphic standards (e.g., the United States Air Force and the S.H.A.R.E. Committee). Software to create flowcharts existed since 1957 and a language (Systems Flowchart Language) had also been created. But the diffusion of the standards took place practically thanks to the sale of plastic templates to draw flowcharts. In the 1960s a new committee attempted to develop a standard through the Business Equipment Association, the American Standard Association, members from computer suppliers and major users. With a compromise, it was published in 1963 as American Standard (later released by the Association for Computing Machinery). At the same time, this effort was carried out by the International Standard Organization (ISO). In 1965 there was a major revision followed by some minors in the years 1966 and 1968. The revision that led to the ANSI 1970 version was carried out to align as much as possible with the ISO version and is the one described by Ned Chapin in "Flowcharting With the ANSI Standard: A Tutorial" [Cha70].

Further proof of the brainstorming that characterized the 1960s, flowcharts can be considered as a variant of Joseph Novak's concept maps proposed as a tool to highlight, within a certain topic, the main concepts and their respective links (Novak's ideas were taken up by Tony Buzan with the introduction of mind maps)[Sco19]. The different areas of use of a flowchart have led several authors to propose a classification of flowchart types.

Sterneckert classification [Ste03] is based on different user groups (e.g. managers, system analysts and employees):
1) Document flow diagrams, which show the controls on a flow of documents through a system,
2) Data flow diagrams, showing controls on a data flow in a system,
3) System flow chart, showing physical or resource level controls,
4) Program flowchart, which shows the controls in a program within a system.

The weaknesses of a flowchart

A map is not the territory [Sco19], just as photography

Ned Chapin was born on August 8, 1927 in Port Gamble, Washington, United States, to M.C. Chapin and Rose Smallwood, then living in different locations between Washington, Oregon, and California. After graduating from Eureka Senior High School in 1945, he attended Stanford University (where he was also a percussionist in the Symphony Orchestra). He earned an MBA from the University of Chicago in 1949. During the Korean War he served in the American Army as an engineer. On 12 June 1954 she married a fellow university student, June Roediger, with whom she had two daughters: Suzanne and Elaine (who in turn became a scientist). After his PhD from the Illinois Institute of Technology in 1959, he moved to Menlo Park, California, where he lived for the rest of his life. Although he worked for 10 years at Stanford Research Institute (now SRI International), for most of his career he was an independent consultant at Infosci Inc. At the age of 60, he was a professor and later became an Emeritus Professor of Information Systems at California State University.

Fig.10

Ned Chapin was a leader in the field of computer science, always in particular in the discipline of software maintenance. During 61 years of his career, he published more than 250 articles and conference proceedings. He wrote 8 books including "An Introduction to Automatic Computers" of 1955 (the second general book on computers published commercially) and "Computers: A Systems Approach" of 1971. He founded and edited "Journal of Software Maintenance and Evolution". He remained active at work until the end of his life. For example, he was a member of the International Conference on Software Maintenance and Evolution in Victoria in October 2014. His hobbies included reading science fiction novels, listening to jazz vocals and looking for mushrooms. He was a supporter of manned Mars missions and was a founding member of the Computer History Museum. He died on December 27, 2014. The family asked (instead of flowers) donations to the museum [KN75][TA15].
(see http://www.computerhistory.org/)

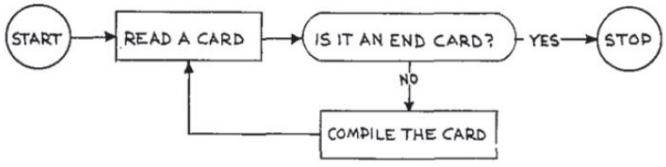


Fig.11

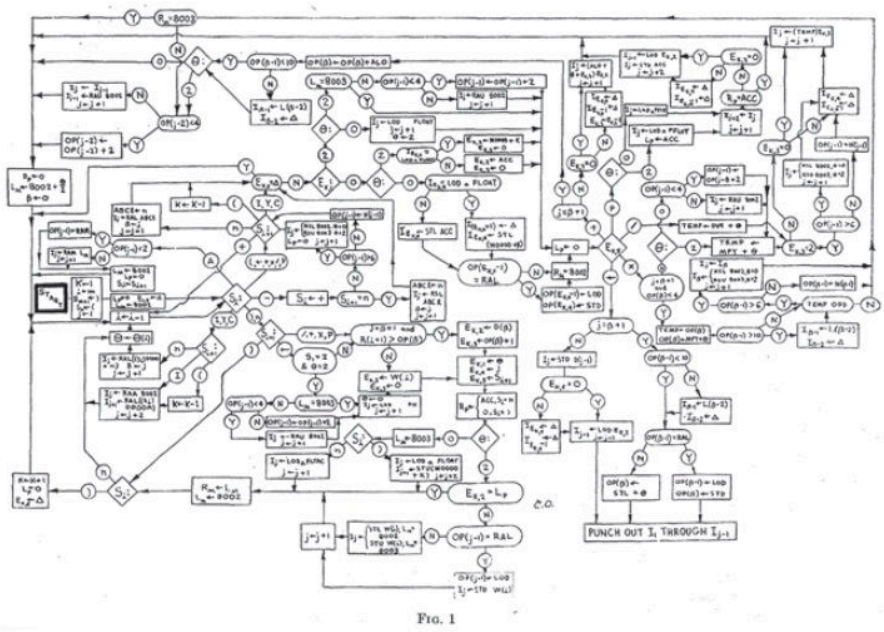


Fig.12

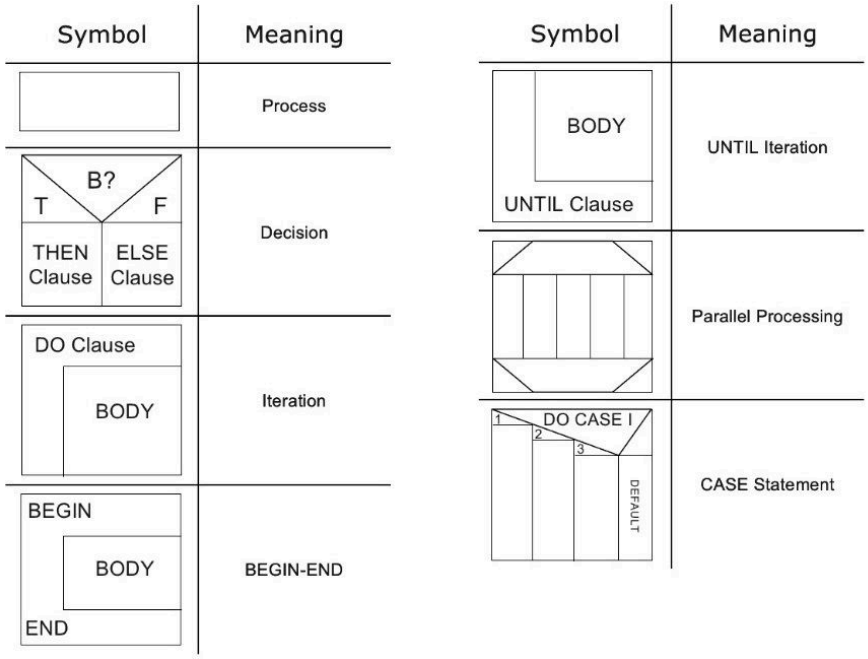


Fig.13

is not the subject taken. Even in flowcharts there is a simplification through a "conceptual filter" where the most important elements are distinguished from the least important, redundant or disturbing ones. So producing a flowchart requires compressing, condensing, and deleting details. But which and how many? A wrong choice will render the flowchart unusable [Ens16]. Donald Knuth in a 1963 article ("Computer-Drawn Flowchart") denounced two opposite extremes: a content-poor flowchart (Figure 11) and an overly detailed one (Figure 12).

Another problem regarding flowcharts is that they can encourage the use of "GO TO" in programming with "disastrous effects" in code writing ("spaghetti-program", Dijkstra). In August 1973, two newly graduated students (Ben Shneiderman and Ike Nassi) published their own symbology that conformed to the structured programming paradigm (Figure 13 from [Fil09] with example in Figure 14). NS diagrams are adjusted according to DIN 66261-1985-11 and ISO/IEC 8631:1989. For the sake of completeness of information, the existence of additional alternatives such as Warnier-Orr diagrams, Jackson diagrams and writing in pseudocode is mentioned.

Conclusions

Flowcharts were born with the laudable intent of documenting work processes in order to improve them and alleviate

A new idea rejected too quickly

Ben Shneiderman and Ike Nassi initially submitted their article to the magazine "Communication of the ACM" but on October 4, 1972 it was rejected in a bad way with an unsigned letter written on watermarked paper by Cornell University (a clue fueling suspicion about David Gries, editor at the time for the programming languages part). They then sent the article to "ACM SIGPLAN Notices" (an informal monthly) which published it in August 1973.
Meanwhile, some drafts of the article had circulated in academia and publications by others (including Ned Chapin, "Chapin charts") containing some small variations had appeared. A friend of Shneiderman's was asking for Chapin to be sued for stealing the idea. Ben Shneiderman feared for years that Chapin's reputation and frequent seminars would eventually tie his name to the invention. Fortunately over time "structured flowcharts" became increasingly known as "NS Diagrams".
Still with the words of Shneiderman [Hop19]: "I also hope that the story of the bold rejection of our novel idea and its eventual international success, is an inspiration for anyone whose new ideas are rejected by some respected authorities".

the fatigue of the most humble workers (Gilbreth).

Later they were replaced by more modern and less expensive methods. This paper ends with a bit of humor, showing in Figure 15 a cartoon by computer text illustrator Daniel Le Noury, republished by MC Microcomputer in 1985 [MC85].

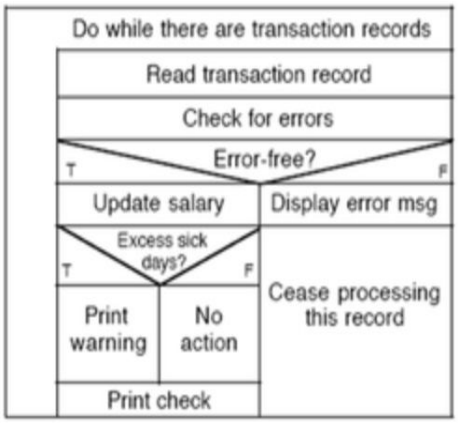


Fig.14

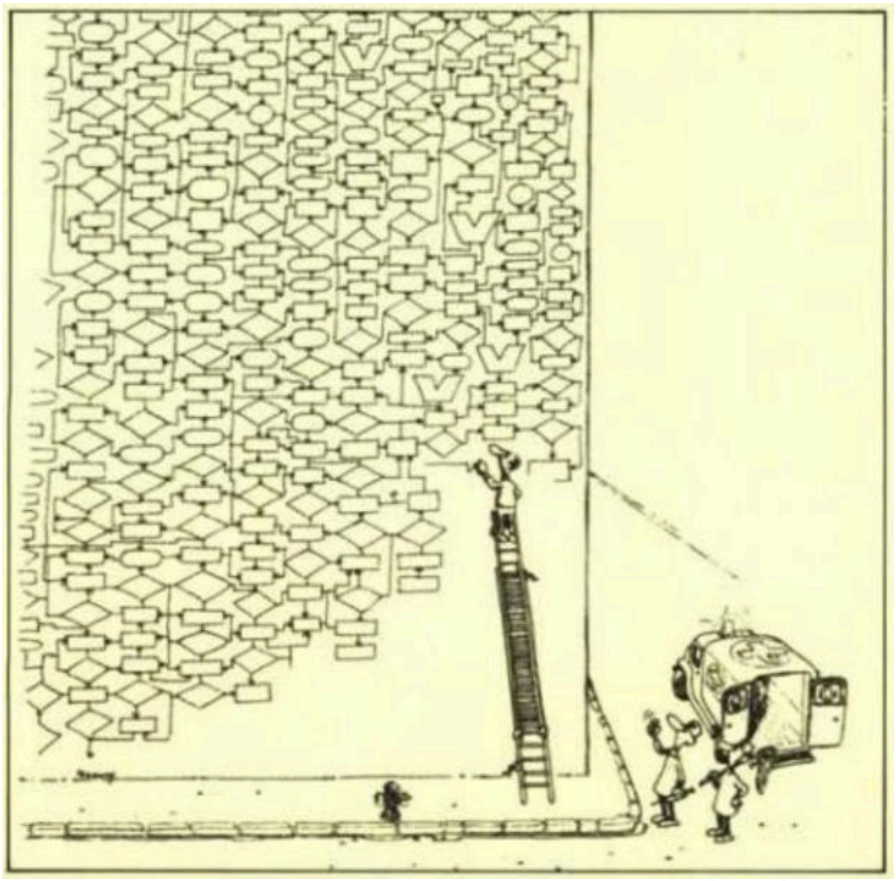


Fig.15: Le Noury cartoon from "Computer Crazy" (1984)

Bibliography

[All16] T.Allweyer, "BPMN 2.0: Introduction to the Standard for Business Process Modeling",BoD – Books on Demand, 2016.
[BD09] M.Bullynck, L.De Mol, "Curry's study of inverse interpolation on the ENIAC", 2009, https://www.clps.ugent.be/sites/default/files/talk-slides/CHOC_Curry.pdf
[Cha70] N. Chapin, "Flowcharting With the ANSI Standard: A Tutorial", Computing Surveys, Vol. 2, n. 2, Jun. 1970, pp. 119-146, http://gr.xjtu.edu.cn/c/document_library/get_file?p_l_id=586332&folderId=583398&name=DLFE-9604.pdf
[Char11] P.M. Charantimath, "Total Quality Management", Pearson Education India, 2011.
[Ens16] N. Ensmenger, "The Multiple Meaning of a Flowchart", Information & Culture, Vol. 51, n.3, 2016, pp. 321-351, http://homes.sice.indiana.edu/nensmeng/files/Ensmenger2016.pdf
[Fil09] H.G.Fill, "Visualisation for Semantic Information Systems Business and Economics", Springer Science & Business Media, 2009.
[FP83] V.Falzone, G.Pompei, "Elaboratori elettronici e loro applicazione", Vol. 1, Calderini, 1983.
[GG21] F.B.Gilbreth L.M.Gilbreth, "Process Charts", The American Society of Mechanical Engineers, 1921, https://archive.org/details/processcharts00gilb/page/n1/mode/2up
[Hop19] D.Hopkins, "Flowcharts of programming language constructs", consultato il 2019_06_02, https://news.ycombinator.com/item?id=22329274
[KN75] C.D.Kinsman, C.Nasso, "Contemporary authors: a bio-bibliographical guide to current authors and their works", Volumi 21-24, Gale Research Co., 1975.
[MC85] AA.VV., MC Microcomputer ,n. 40, Apr. 1985, pag. 20, https://issuu.com/adpware/docs/mc040
[Rof03] J.T.Roff, "Fondamenti di UML", McGraw-Hill, 2003.
[ISO85] AA.VV., " Information processing – Documentation symbols and conventions for data, program and system flowcharts, program network charts and system resources charts", ISO 5807:1985.
[SB14] A.Schultz, J.A.Beverly, "Encyclopedia of Public Administration and Public Policy", Infobase Publishing, 2014.
[Sco19] A.Scocco, "Costruire mappe per rappresentare e organizzare il proprio pensiero", Franco Angeli, 2019.
[Ste03] A.B. Sterneckert, "Critical Incident Management", CRC Press, 2003.
[TA15] AA.VV., "Dr. Ned Chapin Computer Science Pioneer", "The Almanac", vol.30, n.22, pag. 8, 2015_04_02, https://issuu.com/almanac/docs/2015_02_04.alm.section1
[Wit03] M. Witzel, "Fifty Key Figures in Management", Psychology Press, 2003.

Introduction to Commodore C128 graphics - part 2

by Gianluca Girelli

After the introduction to the topic published over a year ago in RMW #21 (Italian version), we resume the topic about 8-bit graphics on the Commodore128. As well known, compared to that of C64, BASIC 7.0 of C128 made available to the user a whole series of commands that made the work of graphic composition decidedly slim and modern.

In this paper, after expanding a little bit our knowledge of the system and the commands made available by BASIC 7.0, we will analyze some practical examples taken from the book "C128 Programmer's Reference Guide" published by Bantam Books.

In C128 mode, the system has fourteen high-level graphics commands that make graphics programming easy. You can draw circles, quadrilaterals, lines, dots, and other geometric shapes with ten commands like DRAW, BOX, and CIRCLE, plus four commands for sprite management (we'll look at these commands in a later paper).
Compared to the work you need when using the C64, you don't need to be an experienced machine language programmer or purchase additional software packages to display complex and visually pleasant graphics: commodore 128'S basic graphics capabilities will take care of this for you.

Graphic features of the C128 include:
• Specialized graphics and sprite controls;
• 16 colours;
• 6 display modes, including:
  Standard font mode;
  Multicolor font mode;
  Extended background color mode;
  Standard bitmap mode;
  Multicolour bitmap mode;
  Bitmap and font modes combined (split-screen);
• 8 hardware SPRITES;
• Custom programmable characters;
• Vertical and horizontal scrolling.

Your computer can produce two types of video signals: 40-column composite video and 80-column RGBI video. The composite video signal, channeled through VIC II (Video Interface Controller - 8564) chip similar to that used in the Commodore 64, mixes all the colors of the spectrum into a single signal to the video monitor. The 8563, on the other hand (the chip for managing the 80 columns) separates the red, green and blue colors to separately guide the action of the cathode ray "gun" for a cleaner, sharper and higher contrast image compared to the composite video.

We have already learned in previous numbers how the text display works and how to redefine characters, both to have new font sets and to use them as screen graphics (for example within a game). We now begin to analyze in detail the management of the graphic scheme through the use of high-level instructions. For the sake of completeness of information, please note that the C128 is also able to operate in split screen mode and manage text and bitmap graphics simultaneously.

Below is the list of graphic primitives that can be used; note in particular the GSHAPE and SSHAPE instructions that allow you to manage images after saving them within string variables.

BOX: Draw rectangles on the bitmap screen;
CHAR: Displays the characters on the bitmap screen;
CIRCLE: Draws circles, ellipses and other geometric shapes;
COLOR: Select colors for screen border, foreground, background, and fonts;
DRAW: Display lines and dots on the bitmap screen;
GRAPHIC: Select a screen display mode (text, bitmap or bitmap split-screen);
GSHAPE: Gets the data from a string variable and places it at a specified location on the bit-map screen;
LOCATE: Places the cursor on the bitmap screen at specified coordinates;
PAINT: Fills an area of the bitmap screen with the specified color;
SCALES: Sets the relative size of the images on the bitmap screen;
SSHAPE: Stores the image of a part of the on the bitmap screen in a string variable;
WIDTH: Sets the width of the drawn lines.

Then let's start doing some experiments with the basic forms. In this first example, we will draw squares and rotate them downwards to create a fake three-dimensional effect.

First we will set the colors of our graphics screen - background, foreground and border - using COLOR instruction. The syntax is as follows:

```
COLOR source number, color number
```

where "source" has the meaning given in the following table:

0 40-column (VIC) background
1 40-column (VIC) foreground
2 multi-color 1
3 multi-color 2
4 40-column (VIC) border
5 character color (40- or 80-column screen)
6 80-column background color

while "color" corresponds to the following table:

CODE	COLOUR	CODE	COLOUR
1	Black	9	Orange
2	White	10	Brown
3	Red	11	Light Red
4	Cyan	12	Dark Gray
5	Purple	13	Medium Gray
6	Green	14	LightGreen
7	Blue	15	Light Blue
8	Yellow	16	Light Gray

Then, after drawing a square and filling it with color, we will create the "cascade" of squares through a FOR-NEXT loop. The parameters of BOX instruction are as follows (note the "angle" parameter used to rotate the figure):
BOX [source number], X1, Yl[,X2,Y2][,angle][,fill]

Below is the code for the first example:

```
10 COLOR 0.1:COLOR 1.6:COLOR 4.1
20 GRAPHIC 1.1:REM SELECT BMM
30 BOX 1,10,10,70,70,90,1:REM DRAW FILLED GREEN BOX
40 FOR I=20 TO 140 STEP 3
50 BOX 1,I,I,I+60,I+60,I+80: REM DRAW AND ROTATE BOXES
60 NEXT
70 BOX 1,140,140,200,200,220,1: REM DRAW 2ND FILLED GREEN BOX
80 COLOR 1.3:REM SWITCH TO RED
90 BOX 1,150, 20,210,80,90,1 : REM DRAW FILLED RED BOX
100 FOR I=20 TO 140 STEP 3
110 BOX 1,I+130,I,I+190,I+60,I+70: REM DRAW AND ROTATE RED BOXES
120 NEXT
130 BOX 1,270,140,330,200,210,1:REM DRAW 2ND FILLED RED BOX
140 SLEEP 5 :REM DELAY
150 GRAPHIC 0, 1:REM SWITCH TO TEXT MODE
```

In the second example, however, we will use the DRAW statement to create a chart on a Cartesian plane.
In addition, we will overlay the reference legend with CHAR instruction, which allows you to display characters

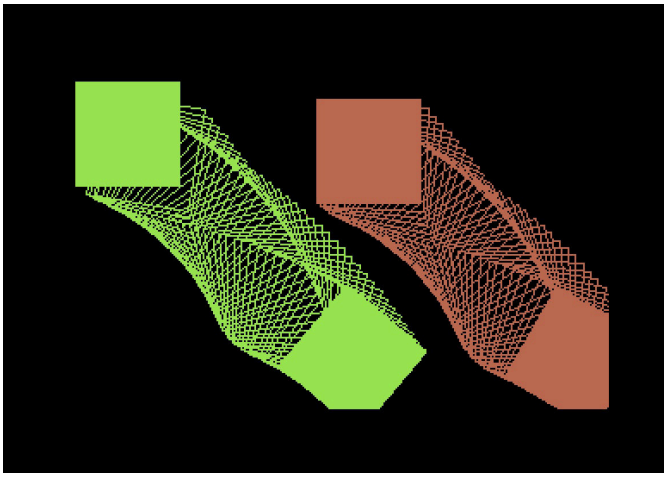


Fig. 1 - Output of the first sample program

on the bit-map screen.
The syntax of the two statements is as follows:
DRAW [source number], [X1, Y1][TO X2, Y2] ...
CHAR [source number],X,Y[,string to print][, color inversion]

Note, as we had already highlighted on RMW21 issue, where the lines intersect involving the presence of more than one colour per single square of 8x8 pixels, the last colour drawn will "dirty" the previous one.

```
10 COLOR 0.1:COLOR 4.1:COLOR 1.7
20 GRAPHIC 1.1:REM SELECT BMM
30 Y = 1
40 DO
50 DRAW 1.1,Y TO 320, Y:REM DRAW HORIZONTAL LINES
60 Y=Y+10
70 LOOP WHILE Y<200
75 X=1
80 DO
90 DRAW 1, X,1 TO X,200: REM DRAW VERTICAL LINES
95 X=X+10
97 LOOP WHILE X<320
100 COLOR 1.3:REM SWITCH TO RED
110 DRAW 1,160.0 TO 160,200:REM DRAW X AXIS IN RED
120 DRAW 1,0,100 TO 320,100:REM DRAW Y AXIS IN RED
130 COLOR 1.6:REM SWITCH TO GREEN
140 DRAW 1,0,199 TO 50,100 TO 90,50 TO 110,30 TO
```

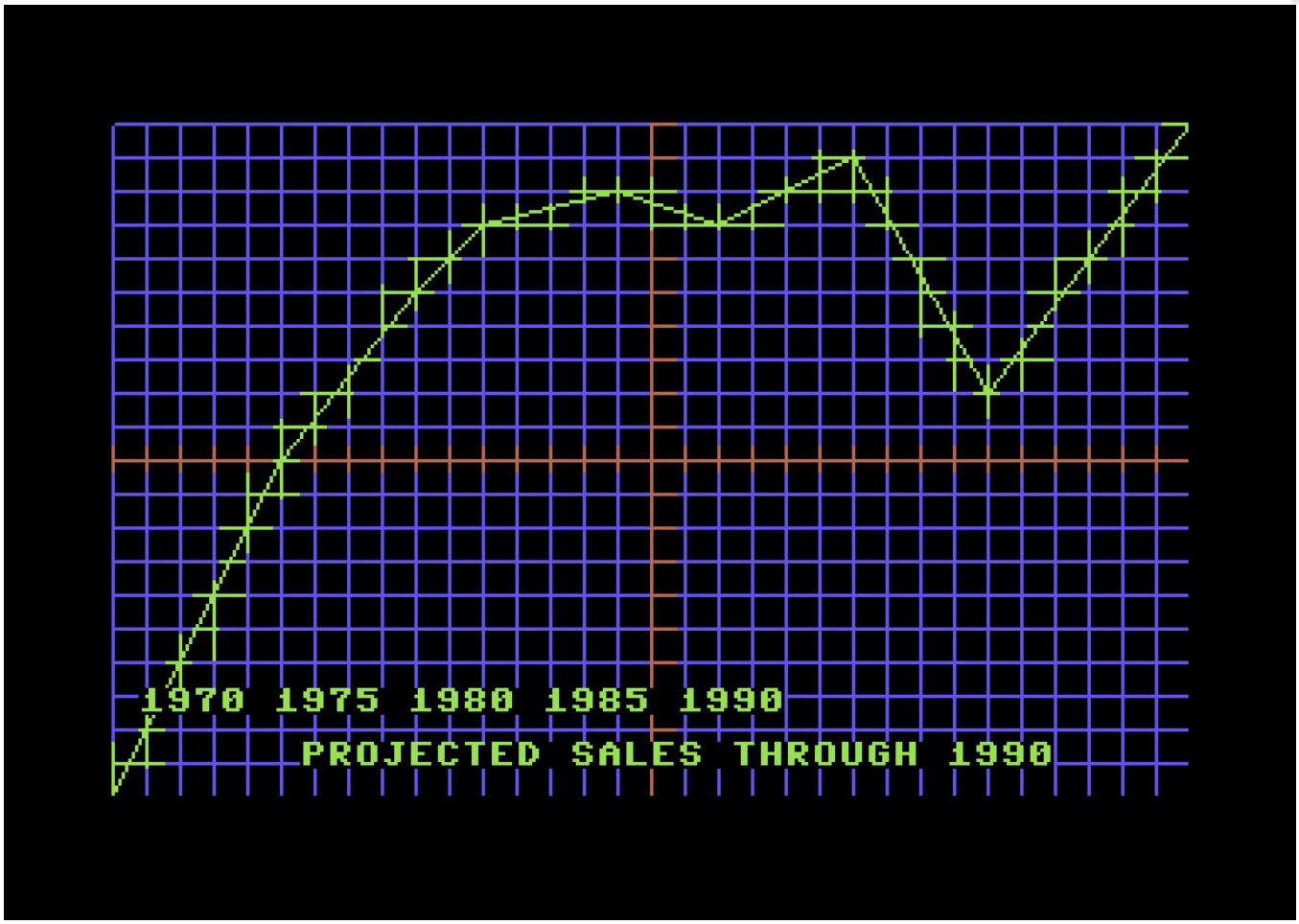


Fig. 2 - Output of the second sample program

```
150,20 TO 180,30
150 DRAW 1,180.30 TO 220.10 TO 260.80 TO 320.0:
REM DRAW GROWTH CURVES
160 CHAR 1,7,2 3,"PROJECTED SALES THROUGH 1990"
170 CHAR 1,1,21, "1970 1975 1980 1985 1990"
180 SLEEP 10:GRAPHIC 0, 1:REM DELAY AND SWITCH
TO TEXT MODE
```

Finally, we see things using SSHAPE (which saves an image within a string variable) and GSHAPE (loads the image and displays it at user-defined coordinates) statements. Let's start by examining the syntax:
SSHAPE variable string, XI, Yl [,X2,Y2]
where: string variable is the variable in which to save data;
X1,Y1 are the coordinates of the upper-left corner (0.0 to 319,199) where to draw the shape (possibly scaled);
X2,Y2 coordinates of the opposite angle (X1,Y1).

GSHAPE string variable [X,Y][,mode]
where "string variable" contains the shape to be drawn, while "X,Y" are the coordinates of the upper-left corner (0.0 to 319,199) where to draw the shape. In addition, "mode" has the following meaning:

0 = leave the shape as it is (default);
1 = reverse colour shape;
2 = "OR" operation between shape and area;
3 = "AND" operation between shape and area;
4 = "XOR" operation between shape and area.

The following code will create the Commodore symbol (C=) and draw it repeatedly on the screen.
The operation takes place in three steps:
- in the first a double concentric circle is drawn, from which a part is then removed to create the "C".
This is done by saving the shape containing the circles in a variable (A$) and then subjecting it to an "exclusive OR" (XOR) operation with another shape (BOX instruction, line 60);
- the second step is to complete the Commodore symbol with the "flag" and fill the resulting shape with colour;
- finally, the complete symbol is saved in a new variable (B$) and displayed in sequence on the graphic video.

```
10 REM DRAW, SAVE AND GET THE COMMODORE SYMBOL
20 COLOR 0.1: COLOR 4.1:COLOR 1.7
30 GRAPHIC 1.1:REM SELECT BMM
40 CIRCLE 1,160,100,20,15:REM OUTER CIRCLE
50 CIRCLE 1,160,100,10,9:REM INNER CIRCLE
60 BOX 1,165,85,185,115:REM ISOLATED AREA TO BE
```

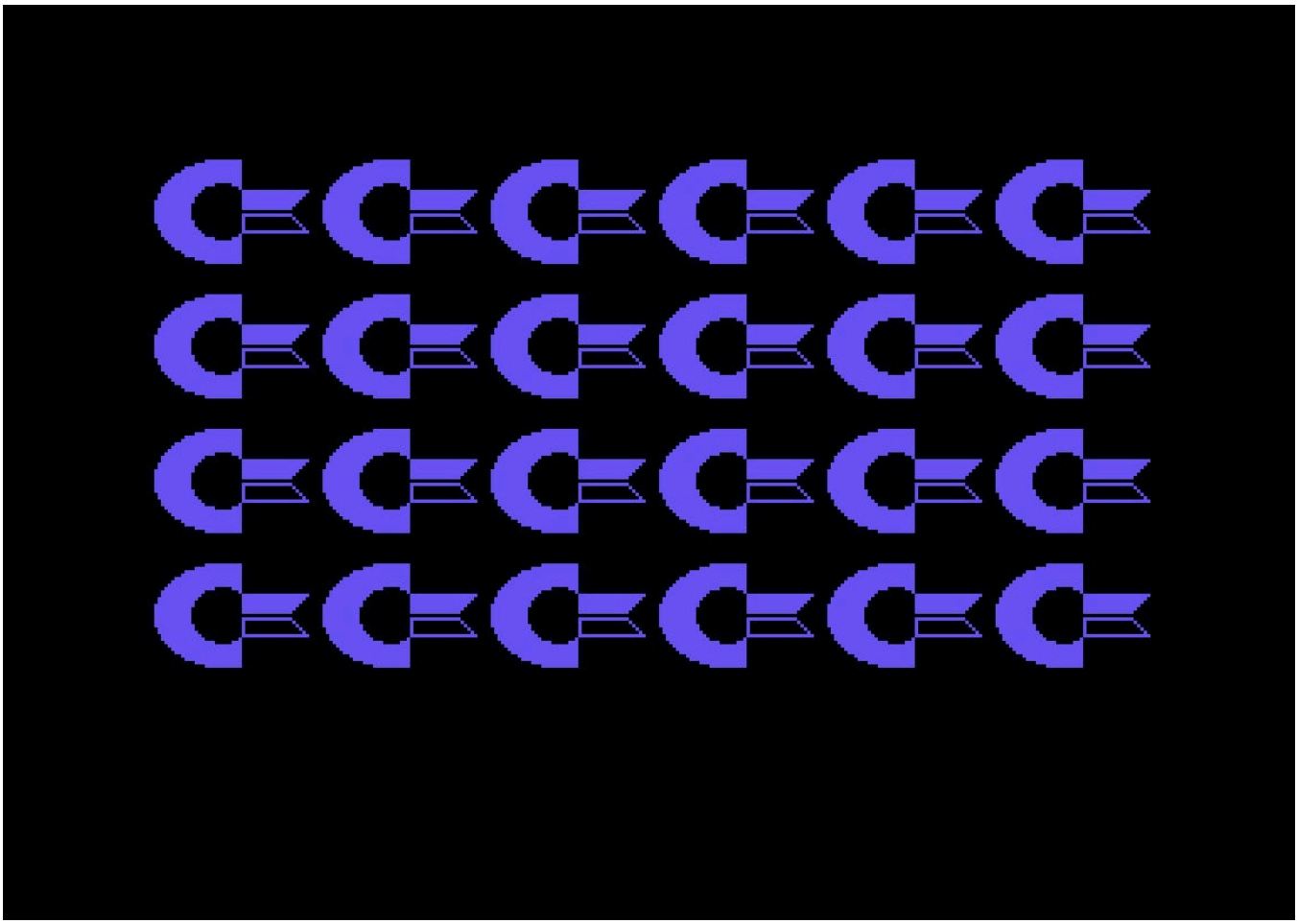


Fig. 3 - Output of the third sample program

```
ERASED
70 SSHAPE A$,166,85,185,115:REM SAVE THE AREA
INTO A$
80 GSHAPE A$,166,85,4: REM EXCLUSIVE OR THE AREA-
THIS (ERASES) TURNS OFF PIXELS
90 DRAW 0.165,94 TO 165,106: REM TURN OFF (DRAW
IN BKGRND COLOR) PIXELS IN "C="
100 DRAW 1,166,94 TO 166,99 TO 180,99 TO 185,94
TO 166,94:REM UPPER FLAG
110 DRAW 1,166,106 TO 166,101 TO 180,101 TO
185,106 TO 166,106: REM LOWER FLAG
120 PAINT 1,160,110:REM PAINT "C"
130 PAINT 1,168.98 :REM UPPER FLAG
140 SLEEP 5:REM DELAY
150 SSHAPE B$,137,84,187,116:REM SAVE SHAPE INTO B$
160 DO
170 SCNCLR
180 Y=10
190 OJ
200 X=10
210 OJ
220 GSHAPE B$, X,Y:REM GET AND DISPLAY SHAPE
230 X=X+50:REM UPDATE X
240 LOOP WHILE X<280
250 Y=Y+40:REM UPDATE Y
260 LOOP WHILE Y<160
270 SLEEP 3
280 LOOPS
```

So we have come to the end of this tutorial illustrating the use of some very powerful instructions, such as manipulating images on the bitmap screen using strings. On the C128, this method is also an alternative way to create sprites, since you can directly assign the variable that contains the shape created to the memory area that manages the hardware sprites using the SPRSAV (SPRite SAVe) statement.

So goodbye to the next issue with Part 3 of our tutorial where we will start experimenting with sprites.

BIBLIOGRAPHY

C128 Programmer's Reference Guide by Commodore Business Machines, Inc.

Bantam Computer Books, February 1986

Turbo Rascal Syntax Error

A complete cross-platform framework for 8/16-bit development

by David La Monaca

Intro

For some time now, here at RMW, we have repeatedly reported a renewed and growing general interest in retrocomputing and retrogaming. The numbers speak for themselves. Not only old nostalgic people from their forties onwards have resumed using 80s/90s consoles and home computers, but also the youngest and millennials are discovering this world (which is completely new to them) made of simple but powerful gaming machines. And so the production of new games and software is also gathering success and reinforced drive also from young programmers and teams as well as veterans. Of course, software production systems also changed.

For those who lived the era of the first 8-bit computers, which from the 1980s entered the daily life of boys, students and families, it will not be difficult to remember how you tried to write code. Using assembly language was basically mandatory when trying to create something fast (games or demos), while the much slower BASIC language was enough for some management or short study program. Only software houses of a certain level had cross-compilers available, which ran on the first compatible PCs (XT/AT) and were mainly employed to reuse or adapt written code for a particular processor and thus reduce the creation time of a game or its porting to different platforms. Those who programmed on their own (even professionally, do you remember the so-called bedroom coders?) and had the only hard-earned 8-bit computer, were often armed with paper notebooks, a decent assembler, some specific tools for audio and graphics and lots of patience and creativity.

Today, about 40 years later, the programming tools available are such and so many that for those who want to start (or resume) programming 8/16 bit machines there is a lot of choice. Or rather, it is often about looking for the most compact or convenient and fastest solution among all available. Of course you can choose the old-style way that involves the use of the target machine also to program and perhaps some more recent tools to promote the rapid development of games, demos, programs. Or you can opt for an intermediate route, setting up a development for a specific platform including several coding tools (editor, music composer, graphic designer, assembler and emulator) all connected by a properly configured toolchain to ensure a convenient and safe path to produce executables and accessory files of a

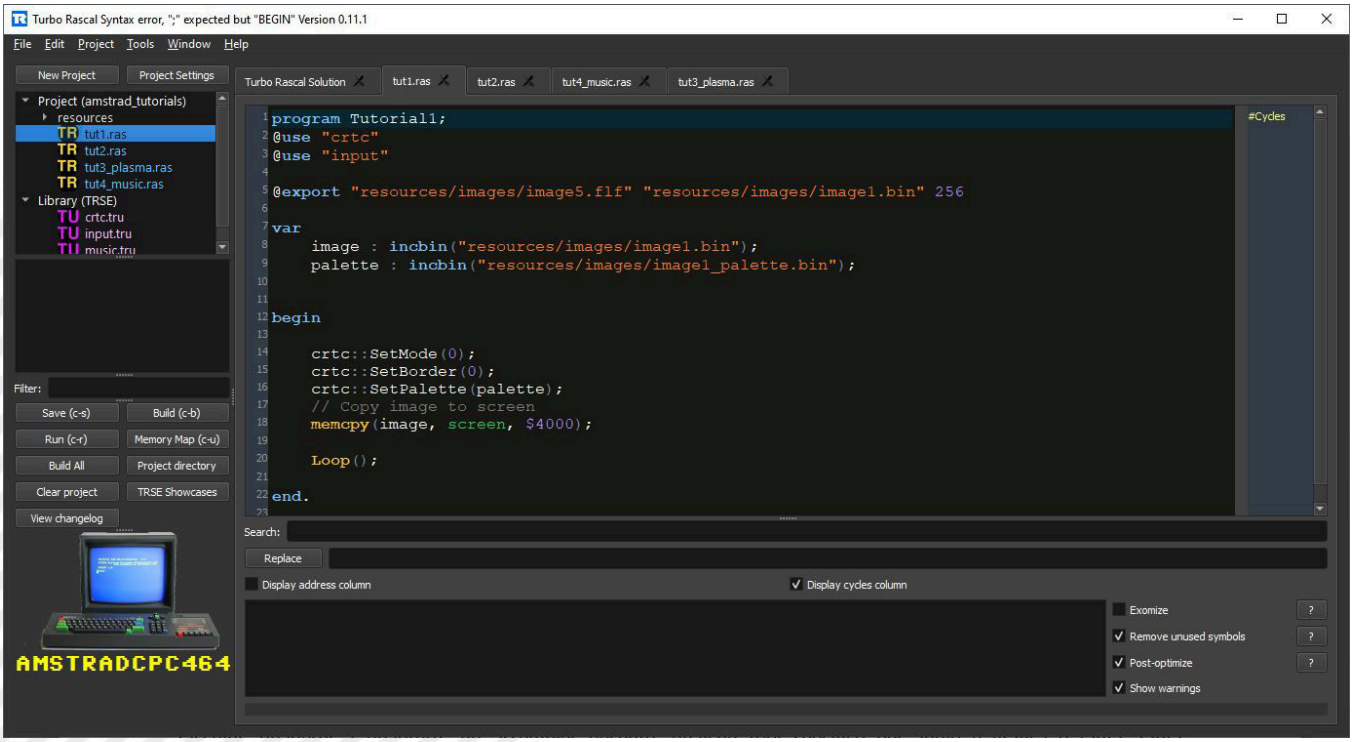


Fig. 1 - Example of a Project for AmstradCPC

software project. Finally, you can easily install a real integrated, multi-platform IDE based on the use of high-level languages. For 8-bit and 16-bit machines, for example, you can choose CC65 (a multi-processor compiler that can be easily integrated into modern IDEs such as Visual Studio or Eclipse) or 8-bit Unity, an SDK to develop games using C and obtain executables for many 8-bit machines.

In the same vein, recently appeared a new software framework of excellent workmanship that goes under the short name Turbo Rascal SE (whose bizarre full name is: "Turbo Rascal Syntax error, ";" expected but “BEGIN”). The author and current chief programmer of the project, Nicolaas E. Groeneboom, owned a C64 as a boy but had never really approached coding until the 90s, after the advent of the first x86 PCs. Born in February 2018 with the help of Michael Andrew Hewitt and a large team of expert coders, TRSE is a complete collection of tools (integrated environment, editor, compiler, programming language and resource library) made available to programmers to build mainly games and demos for the old 8/16-bit machines.

Particular support was provided for the MOS 6502, Motorola 68000, Z80 and X86 processors. There are many supported target machines: 8-bit Commodore (C64, VIC-20, C16/Plus4, C128, PET), Atari 800, BBC Micro, NES and Gameboy consoles, ZX Spectrum, Amstrad CPC464, Atari 2600, MSX, Apple II, Mega65, Amiga 500, Atari 520ST, 8086AT and many more. The peculiarity of this framework is the use of the programming language adopted (essentially Pascal) with the possibility of integrating parts of code into the assembly to speed up some routines in which execution speed is particularly important. The presence of an IDE featuring error messages, syntax highlighting and automatic code completion, greatly facilitates the development and debugging of programs and subroutines. Numerous sample projects are provided for each target platform, as well as tutorials within the framework or available on the official website. Facebook groups or dedicated forums also help simplify the approach to the use of the framework and break down the learning curve.

Installation and configuration

Downloading and installing the latest version from the official TRSE project site is as easy as you can imagine. TRSE is compiled every night from the latest available sources, so the download always contains the latest updates. Supported operating systems are the most popular for PCs (Windows 64-bit, Linux 64-bit and macOS) and the application runs in stand-alone mode.

The only precaution you need to follow as a user is to get the emulators for each 8/16-bit platform you want to develop. After the compilation process, in fact, you can automatically launch the emulator suitable for your current project and immediately check whether your code is working properly or not. As an example, for Commodore 8-bit we recommend the use of the well-known VICE emulator, FS-UAE or Win-UAE for Amiga, Mednafen for Gameboy/NES, Hatari for Atari ST and so on.

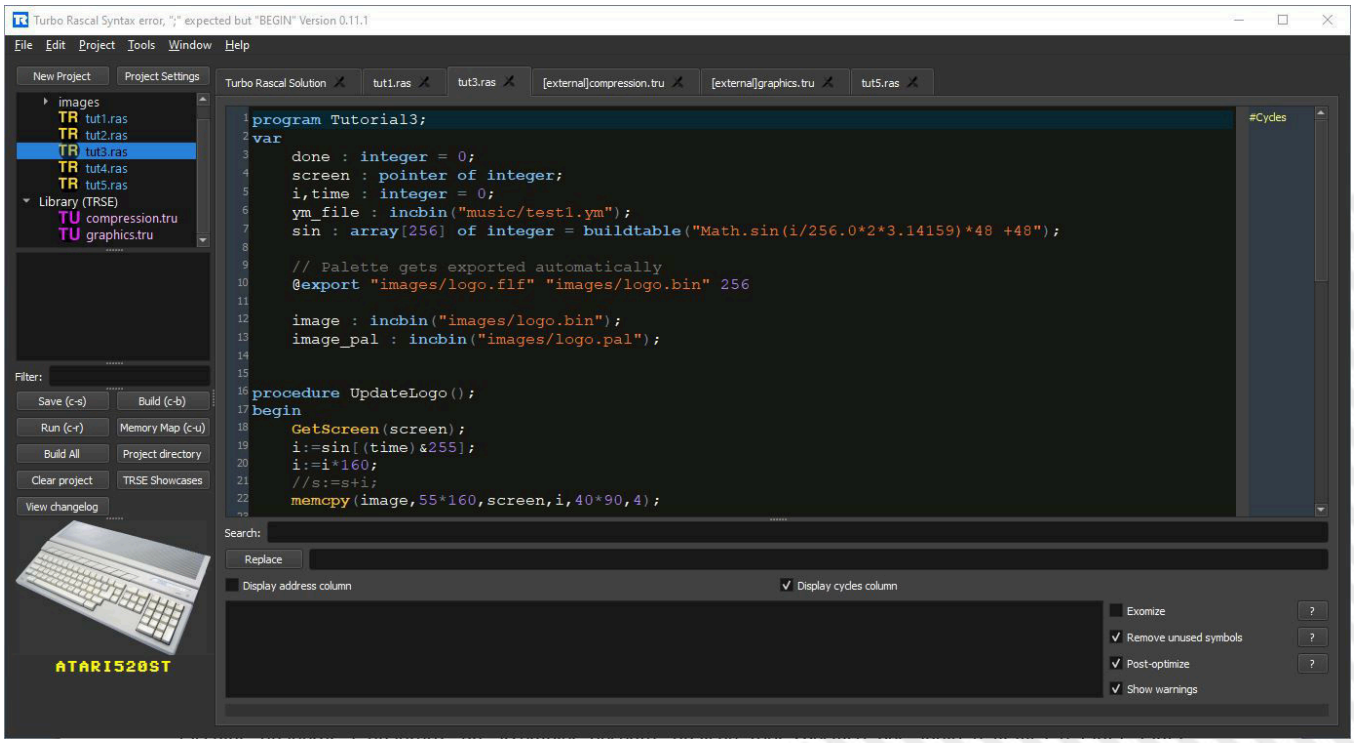


Fig. 2 - Code of an Atari ST program

Fig. 3 - Memory map (CTRL+U)

TRSE includes an assembler for 6502, whereas for other CPU-based systems you can configure suitable assemblers, such as VASM for 68000, NASM for DOS, RGBASM for Gameboy, Z80-ASM for ZX Spectrum, and so on. Once you configure the settings for emulators and assemblers, my advice is to start with one of the many projects / tutorials made available by the framework.

If you're already familiar with Pascal or some other high-level programming language, you won't find it hard to understand the basic structure of a program or a game. The editor allows you to view and edit some types of files directly.

Table of file types supported by TRSE

.RAS Turbo Rascal source file
.ASM assembly file for MOS6502, DASM syntax
.TRU Turbo Rascal Unit files, source files containing user libraries
.PAW Disk and Package Files
.FLF Turbo Rascal image file (sprite, charset, Amiga images, C64/VIC-20 bitmaps)
.FJO ray tracer source file

In order to compile a .RAS file, just press CTRL+B to build the source code or CTRL+R to compile and run the code in the associated emulator. The CTRL+U command instead generates a complete memory map of the project being developed (fig. 3).

The basic syntax of the IDE

As mentioned, if you decide to use TRSE for your 8/16-bit projects, you will find yourself with a full development environment that includes a very powerful and full-featured editor to help you write good code. This code will mostly follow the syntax of dear old Pascal, the programming language created by Niklaus Wirth at the Polytechnic of Zurich in 1970 mainly for educational purposes and then become for years the reference point of all structured programming courses (i.e. before the advent of object programming). The typical structure of a TRSE program is as follows:

```
Program ProgramName;
var a, b, c: byte = 0;
Procedure nProc(param:bytes);
var x, y: byte;
begin
// Performs a series of operations
end;
Function nCalc(z : integer): integer;
var z1, z2 : integer = 3;
var z3: integer = 5;
begin
// Performs function processing
nCalc := z + z1 + z2 + z3
end;
// Main program block
begin
// Performs operations and call user-defined
procedures, etc.  nProc(4);
// Other instructions
sum : = nCalc(10);
end.
```

Each program must begin with the keyword "Program" followed by the program name. Immediately afterwards you can start declaring variables, procedures (keyword “Procedure”) and functions (keyword “Function”). The main block of any program always runs first and starts with the “begin” statement and ends with “end” followed by a dot. Different types of variables are supported (bytes, integers, long, pointers, booleans, strings, etc.). You can also use constants, type modifiers to construct more complex variables and data structures, arrays and also user-defined types. The flow of a program is decided based on conditional instructions, cycles, and the use of functions and procedures. Memory pointers, records and preprocessor commands are also available to the programmer. Classes are not yet fully supported while Units are very useful for building real libraries of user functions that can be easily reused in various projects.

Conclusions

Just take a look at the Showcases section of the official website or launch the tutorials or sample projects included in the installation package to realize the potential of this programming framework. The production of demos, intros, small and large games for the dearest platforms of the 80s and 90s, with this tool and after a few days of running-in, becomes really fast and protected from all those debugging operations that are normally required for pure-assembly projects. The programming environment is fast and comfortable. It's hard to feel the lack of some function compared to other more popular IDEs that are often adapted to write and assemble code for 8/16 bits.

The use of Pascal as a reference and production language may leave some programmers more nostalgic and more attached to traditions a bit puzzled, but it's relatively quick to get used to the syntax and convenience of using procedures and functions, as well as more complex data structures of Pascal. The aim of focusing the programmer's attention on the development of an idea and its implementation in the form of an algorithm is fully achieved.

For each target platform, specific libraries are used to exploit graphics, sprites, animations, music and sound effects, without giving up, if necessary, the possibility of writing assembly code in order to make the most of the custom chip functions of a given machine. In this context, a real gem is the implementation of a ray-tracer, able to create entire graphical animation sequences, often seen in the most advanced demos and intros and an advanced editor to create sprites, backgrounds, fonts and game levels.

In a nutshell TRSE is a completely free development environment for games and demos for the old 8/16 bit systems, written in QT/C++, which has already reached a certain maturity despite, while I am writing this article, it has only reached version 0.12.9. The complete suite includes various tools for designing the main processors

Fig. 5 - MørketId
Amstrad CPC PAL demo (Nov 2020)

of the time. The learning-by-doing approach will be particularly appreciated by all those who already have programming experience and do not want to start from scratch. More than 250 sample files and 40 tutorial projects are included in the framework and they immediately offer material to be analyzed and studied to gain confidence in the development environment and become productive in a short time.

References

- Official web site: https://www.turborascal.com - https://lemonspawn.com/turbo-rascal-syntax-error-expected-but-begin/
- Showcases: https://lemonspawn.com/gallery_/
- Official GitHub Repo: https://github.com/leuat/TRSE
- List of methods and syntax of the functions related to the various target systems: https://github.com/leuat/TRSE/blob/master/resources/text/syntax.txt
- CC65 compiler: https://www.cc65.org
- 8-Bit Unity: http://8bit-unity.com

Fig. 4 - Morphine/Offence
Amiga OCS Demo (Apr 2021)

Fig. 6 - Yo-grl makes a demo
GameBoy Demo (Lug 2020)

ATARI - The origin of the myth

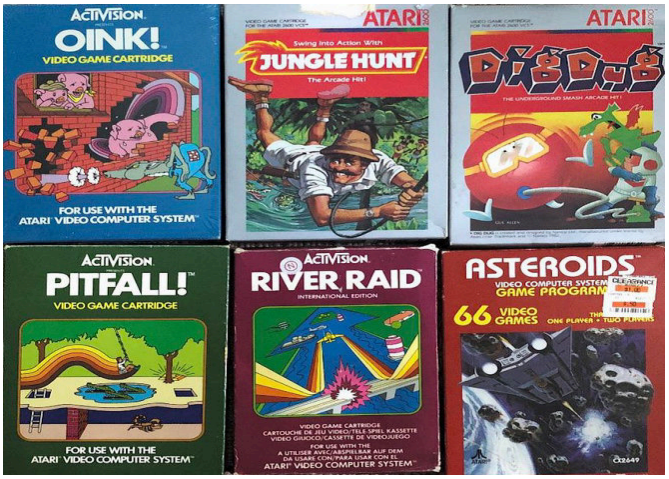
by Francesco Coppola

Meetings in hot tubs, parties organized during the week, use of drugs and alcohol of various kinds, no work uniform; this was the most common work scenario within the "mother" industry of video games in the West: **ATARI**.

An American company created in 1972 that initially distinguished itself for the creation and distribution of arcade video games (the so-called coin-op cabinets), first of all the famous PONG, in which a game of black and white tennis was simulated, based simply on the interaction of two white bars controlled by one or more players who had to move them vertically along the screen to hit the ball and send it back to the sender.

Over the years, however, the arcades around the world became increasingly crowded and the video players of the time were tired of carrying coins full of coins and of "fighting" among other players to grab a gaming station. It was precisely at this juncture (1977) that Nolan Bushnell, one of the founders of Atari, had the brilliant idea to design the first real console for video games: the Atari 2600 VCS. With only $199, you could relive all those adventures of the arcade cabins that until then was popular among children of all ages.
Bushnell had transformed cabinets into "cartridges", simple plastic casings that, once inserted into the console, allowed the player to relive thousands of different, fantastic and surreal worlds.
Hundreds of computer engineers and graphic designers

began to create as many cartridges for the console, working in a "very relaxing" and profitable environment. In fact, Bushnell did not give weight to his employees' shifts or to the classic company meetings in suit: only the final result mattered to him.
In short, ATARI was becoming that mass phenomenon that no one, including Bushnell, expected: the creators of Atari games were crushing American competition thanks to the millions of copies sold in the world of games such as "Yars' Revenge", "Raiders of the Lost Ark", "Adventure" and many others.



However, in 1982 Atari released disappointing versions of two highly publicized games, Pac-Man and E.T., causing an accumulation of unsold games and falling prices. In the same year, Atari also lost a trial against Activision, a company founded by its poorly paid former employees. It was a particularly disastrous year for the most famous home consoles in the world: ATARI was slowly dying.
Many people attribute the video crisis, and Atari in particular, to Howard Warshaw, one of the best game makers in the company. This man became famous for bringing millions of sales to the company but at the same time, creating the "worst game in the history of video games", caused irreparable losses at Atari.

The game in question is "E.T. the Extra-terrestrial", created in a very short time and tested very few times, since its release had to coincide with the Christmas period. Obviously before the official release of the game, Warshaw needed the "authorization" of the creator of E.T., Steven Spielberg who, after trying the game, approved its release, without thinking about what would happen next.

ATARI 2600 VCS - the console

The Atari 2600 or Atari VCS (Video Computer System) was one of first consoles to use cartridges as a game distribution method: sold around 30 million copies worldwide, it is considered one of the longest lasting consoles of all time.

The console uses a plastic container that has six levers on the top that respectively indicate:

1) Turning on the console
2) Video signal output
3) Difficulty for the left player
4) Difficulty for the right player
5) Game choice
6) Reset the game itself.

The first cartridges contained only 2kB ROM memory, where the code and music and graphics data of the game were saved.

The console was sold with two CX10 joysticks, two paddles and a game, "Combat".

Another 8 titles were available for purchase, for a total of 9 games available at launch, for a modest amount of $15-35 each.

CARTRIDGES

Atari cartridges were sold in packs containing an instruction booklet that told the story of the game itself in 6 different languages; among the best sellers who have sold millions of copies we find:

Space Invaders

Game that doesn't need introductions. The classic arcade created in the Land of the Rising Sun caused a shortage of 200 yen coins in Japan due to the extraordinary sales boom found inside the arcades.

Adventure

Considered by many as the first action-adventure game of all time, he immersed the player in fearsome labyrinths populated by dragons to finally find the cup of victory. This game also became famous because it was the first to feature an Easter Egg: finding the name of the game's producer had become a worldwide challenge. An Easter Egg that Robinett, creator of the game, inserted to highlight how the video game industry hid its talents, in fear that they would be hired by domestic or overseas competition.

Kaboom

Another very famous game that despite being produced by third parties (Activision) sold millions of copies; you had to use the console paddle to capture the bombs (using a basket) dropped by a terrorist positioned at the top of the screen. An immersive game that created a certain addiction.

Asteroids

The player had to control a spaceship and shoot as quickly as possible all the asteroids that were heading towards the ship itself; a totally innovative game mechanic that surpassed the static and now dated Space Invaders.

E.T. the Extra-Terrestrial

Hype superlative for this title which proved to be a real flop. Dizzy sales (1.5 million copies) for a game characterized by poor playability and extreme difficulty in understanding the real purpose of the game.

It was the straw that broke the camel's back already full of mediocre titles; in fact the unsold cartridges of E.T. were buried in New Mexico, in Alamogordo, in a landfill and found only a few years ago at 9 meters underground. These were just some of the 550 titles that the video game giant put on the market in less than a decade, causing a real IT revolution.

For the first time in history, TV, considered by everyone to be a merely passive object, became active and addictive thanks to the Atari 2600 VCS.

ANOTHER WORLD: a scary and magnificent journey

by Beppe Rinella

I want to start immediately with a couple of questions: in 2021 does it make sense to review films like "The Godfather" or “Raging Bull"?
And review records like "The Dark Side of the Moon" or "London Calling"?
No, in my humble opinion, it doesn't make any sense.
We are talking about absolute masterpieces, the history of cinema and music.
Certainly by examining them carefully, with a critical eye and putting a certain amount of effort into them, we might also find some flaws, but that would not change the fact that they are fundamental and timeless works, for anyone who loves cinema and music.

Even in the field of video games there are real works of art, essential games that anyone who loves this medium must know.
There are games that mark the year zero, there is a before and after them.
They are games of such historical significance that a review is almost an insult.

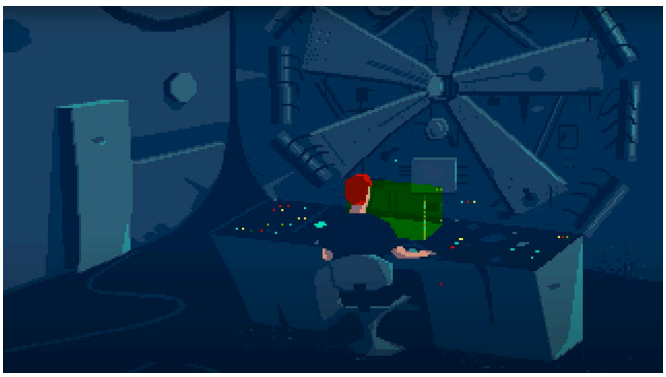
What I want to talk about (and not review) today is undoubtedly part of this category, it is that absolute masterpiece that is Another World, strictly played on my beloved Friend at the time of its release.

Published in (alas, far away) 1991 by US Gold, born from the brilliant mind of the French Éric Chahi and fully developed by him (with the exception of music and sound effects) on and for Amiga for Delphine Software, it took about two years of development, once abnormal by the standards of the time.
In the following years it was converted for any existing platform or almost, I wouldn't be surprised if one day I had to see it spinning inside some appliance.

So here's the game.
But not too fast.
Yes, because first you have to see the animated presentation, a masterpiece in the masterpiece that simply did school. One of those cases where “skipping” the intro should be illegal and severely punished.

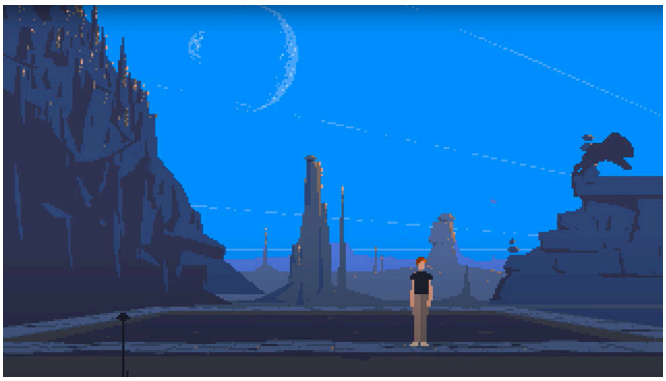
The animated sequence begins, we see a Ferrari that stops burning wheels, with the right degree of boorish that those who own a similar car have every right to show off.
A man descends and heads inside a building, enters the elevator, descends.
It arrives in front of a door, in order to access it inserts a numerical sequence through a keypad, only now do we understand that that building is something more than the anonymous structure that we saw just before.
The man enters, is scanned for recognition, from the computer we learn the first small information: he is a professor and yes, that was a Ferrari.

The professor sits down and starts an experiment with a particle accelerator.
As he quenches your thirst with a drink, the shot moves outside, thunder and lightning, in short, the weather does not promise anything good.



Lightning strikes the lab and gets into the particle accelerator while the experiment is underway.
A thunderous bang and the professor, along with much of his workstation, are gone.
End of story.

There are two elements of this intro that struck me, and still today strike me, more.
The first is the graphic and sound appearance.
Let's remember again, it was 1991. You've never seen such a cinematic introduction to a video game before.
The graphic realization was simply stunning, the direction magnificent, the music created a growing tension that almost led to terror.
From the first frame we knew something was going to happen, we couldn't know what but we knew it wasn't good.
Second element, which will then be present throughout the game: once the animated sequence is over, how much do we know about what is happening? Virtually nothing. We don't know who this professor is, we don't know the



purpose of this experiment, we don't know where the lab we saw is, and we don't even know when.
We obviously don't know where the professor ended up.

If we thought of this presentation as a trailer of a new series, or of a film, we would be curious to say the least, with an expression printed on our faces like "What did I just see?" and we would expect nothing more than to be able to witness what will happen from then on.
This is to say how successful this intro is, to say the least, and still works very well today.

The introduction therefore tells us almost nothing, we have no reference point.
Starting the game we will discover that this is how it will be for the whole adventure and that it will also (perhaps above all) make it unforgettable.

The game begins, we find ourselves catapulted, along with what remains of the aforementioned workstation, into the water.
Personally, I still remember the first time I played Another World, and I remember perfectly well that I died right away.
Yes, because nothing and no one warned me that that was the beginning of the adventure, that at that point it was I who had to do something, I understood it only after I died, grabbed by those tentacles of who knows what huge monster.
So I sensed that, in the course of the game, the number of times I would face death would be quite high, and indeed it was.

Coming out of that kind of pool, the professor takes a breath and there it is, the essence of the game was evident to me already after those few seconds, and it was wonderful.
At that moment I felt scared and disoriented just like the professor, feeling sensations that no game had ever given me before.
I'll explain better.

In whatever adventure we are the character we are using, that is obvious.
We sympathize with him/her, empathize sometimes, in short, identify with adventure by playing that role.
In Another World all this reached a level that perhaps had never been seen before.

Try for a moment to imagine: you are working, in an instant you are in the water, along with part of your desk, having to swim for several meters trying not to drown, chased by huge tentacles.
Get out of the water, and it has already gone well, you are in a place you have never seen and have no idea what to do, where to go and above all what the hell happened.
All you can sense is that wherever you are, it's not a hospitable place.

Well, that feeling of distressing bewilderment is what we players feel, just like the professor.
Like him, we are not provided with any information, there are no on-screen indicators.
No energy, no life, no stopwatch measuring time or any hint of one or more abilities.
No arrow pointing us in the right direction, a goal to achieve, someone to interact with, nothing at all.

We are so selfless that we can almost feel our clothes still soaking wet on our skin.
We feel completely helpless, we have nothing to at least hint at self-defense with.
We don't know who or what to defend ourselves against, but we strongly suspect that we will have to.
All we can do is go right, hoping to find some explanation for what's happening to us.
We have just started and the engagement is already complete.

From now on, any living thing we meet will just want to take us out, or at best imprison us.
Poisonous soft animals, something like a big cat chasing us, huge humanoids who respond with a laser gun to our peaceful greeting.

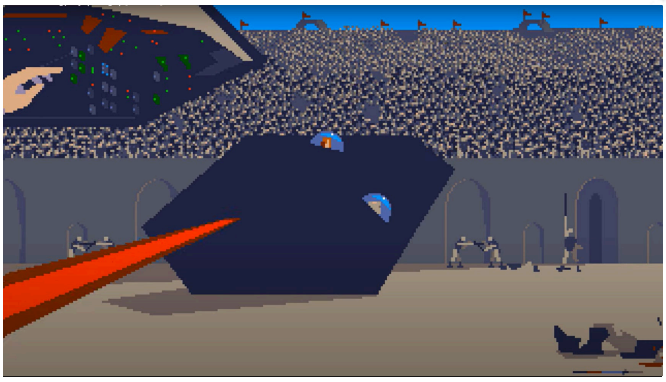
We will soon discover that Another World will always be this.
We will never know what to do and what awaits us on the next screen.
All that will guide us will be the survival instinct.
No collectibles and no record of points to beat.
We are not spotless heroes and perhaps not particularly brave either.
All we know is that we want to survive and that in order to survive we have to escape, but we have no idea where we can go, provided that there is a safe haven in this strange place.
Above all, we have no idea how to get home.

Soon we will meet the only character who will reveal himself to be a friend, imprisoned like us for who knows what reason. It will also tell us something that, of course, causes language unknown to us, we will never understand.
It will be with him and thanks to him that we will begin our escape for freedom.
We will find a gun that will be our only weapon to survive, even though we have no idea how to use it, not entirely, but we will find out.
Not before they're disintegrated at least a couple of times.

From now on, our adventure will be a single, long chase. We'll be in frantic situations, involved in Star Wars-worthy laser gun shootings.
With the difference that in Another World our pursuers have a much better aim than the Stormtroopers, who instead have never hit a target even if they pay money to succeed.

We will experience less chaotic moments when we will not be hunted, but which will not be at all relaxing.
Like arriving in the basement of the prison, where we will still find ourselves alone, without our only friend and where we will come across one of the most claustrophobic sequences ever seen in a video game, at least for the writer.

I am referring to that part, fortunately brief, where we will have to roll without seeing where we are going, hoping



to find the right way.
All this in a very narrow, dark and probably cold space.
It is certainly not the most difficult part of the game, on the contrary, with a couple of attempts you can do it.
Try to imagine yourself in such a situation, though, and tell me if you are not assaulted by total panic.

There is no music in the course of the whole adventure, except for the ending, and there could not have been a better choice.
The total absence of any musical background contributes to the sense of danger that we perceive from the beginning to the end of our adventure, as well as making everything much more likely.
Deep down in our everyday lives, there's no music to accompany our actions, is there?
There's nothing epic or exciting about what's happening to us. We're just desperate people trying not to die.

From a graphical point of view Another World was simply a wonder, although it was quite essential.
Our professor and the other humanoid characters were created using a handful of "naked" polygons, without any texture, very basic.
The animations were made using the rotoscope technique, meaning the same one used in Prince of Persia.
The bottoms are static bitmaps, also in this aspect the essentiality is well present and works great.

With a few lines and a handful of colors, the environments created are full of atmosphere and extremely evocative. Even the different characters, although aesthetically essential, work great.
A really interesting aspect, which largely explains the atmosphere that we breathe throughout the duration of our adventure, concerns the creation of Another World.
When the development of the game began there was no script, a storyboard or anything else, nothing planned in short.

The first part to be realized was the presentation, once

completed even Chahi did not yet know what would happen from then on.

And so it was throughout the development of the adventure that he continued browsing on sight, the developer had no idea what would be on the next screen, what events he was going against and how the story would continue.

We then discover that that sense of bewilderment, confusion and anxiety that the protagonist lives, and we with him, are the sensations that Chahi also felt during the development of what we were playing.
The loneliness of the protagonist, especially of the first part of the game, is his loneliness, that slight sense of anguish due to uncertainty was what he too felt.

This splendid adventure thus becomes a metaphor for its very birth and growth.
We're the professor, but we're also a little like Chahi.
Pure video game poetry.

The end of the game is a lesson that many writers of movies or video games should learn by heart.
Without wishing to spoil anything (dear reader, if you have never played and completed Another World, we cannot be friends), the final sequence leaves us in total uncertainty about what will happen from now on to Professor Knight and his trusted friend.

Actually, we'll know a few years later, and our professor won't end well, unfortunately.
In 1994, the follow-up to Another World was published entitled "Heart of the Alien", in which we find ourselves guiding Buddy, our alien friend, thanks to which we will relive the events of Another World from his point of view.

However, the game was a resounding flop.
Chahi, who initially wanted to end the story with Another World, deliberately providing the player with more questions than answers, did not participate in its development.
He merely supervised the remote work, but was not happy with the final result at all, so happy with his failure.
More than for its quality (not at the levels of the first chapter, but not so bad), Heart of the Alien was the victim of the resounding flop of the only platform on which the game came out, namely the Sega CD.
When you say farsightedness.

Before closing, a couple of notes that tell the importance of the work Another World for generations of future developers and video players: the following year Flashback was published, also by Delphine Software, a respectable game that many considered somehow linked to Another World.
This was probably also due to his graphic style, which in fact had several aspects in common with Chahi's work, probably also the alien setting contributed.
For many it was a sort of spiritual sequel, but it was not.
There is no link between the two games, except Delphine Software, but the influence of Another World is undeniable.

Several years later Fumito Ueda, creator of the wonderful Ico for Playstation 2, explicitly said how much he was influenced by Chahi's creation. For example, see the total absence of on-screen indicators in Ico, as in Another World.
Hideo Kojima, the father of Metal Gear Solid, cited Another World as one of the five games that most affected him.

In conclusion, considering Another World a game is really reductive.
It's a work of art, a swirling set of emotions.
Loss, anguish, fear, excitement, all this and much more condensed into two beautiful floppies.
More than a video game, it is an experience that must be experienced and savoured in every single pixel.
Another World cannot simply be played, Another World must be lived.

Road Hunter TI99/4A

alias Spy Hunter plus Road Fighter

by Ermanno Betori

In the 2013-2014 biennium, an unknown Danish programmer, **Ramsus Moustgaard**, appeared on the world stage of the users of the old TI99/4A retro-computer, presenting in about a year, three games that will change the concept of how to program a video game on that computer.

He created games that were previously impossible to program, the first one was **Titanium**, a vertical scrolling clone of Uridium with parallax scrolling effect, the second one was the almost perfect clone of the arcade game **Scramble** and the third one was **Road Hunter**, which we are going to present.

Road Hunter is the transposition on the TI99/4A of two famous car games **Spy Hunter** and **Road Fighter** that were a huge success in the arcades of the 80s.

Spy Hunter

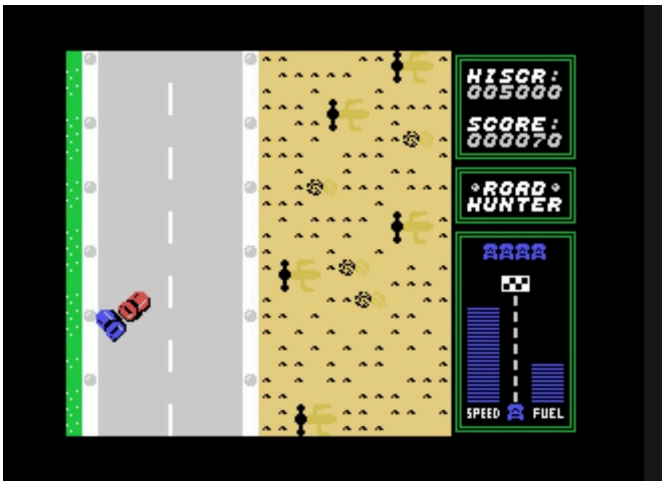
Road Hunter

Spy Hunter and Road Fighter (see above) have as their general setting a vertical scrolling car race, but in reality one game reproduces a chase between cars, secret agent 007 style, while the other is a time race being careful not to collide or run out of fuel.

In fact, in Spy Hunter we have our armoured car that is equipped with various weapons such as machine guns, smoke generators, oil to make opposing cars swerve... Car opponents who in turn have a supply of rubber cutting blades, bulletproof armor or firearms etc... and to complicate everything also appears a helicopter dropping bombs.
All seasoned with an amazing soundtrack that is the theme of **Peter Gunn** created in 1958 by **Henry Mancini** (a curiosity: after many years I discovered that Henry Mancini was actually **Enrico Nicola Mancini**'s stage name, son of Italian immigrants).

This is the arcade game that made the undersigned lose a sea of money in the arcades and that remained engraved in his memory.

Road Fighter, on the other hand, is a game of more skill in avoiding opposing cars and managing petrol supplies, but also very enjoyable; so when after 30 years a clone was released that mixed the two games on the TI99, I was amazed and incredulous.



I was incredulous, because until then it was not thought possible to create a car race with such technical characteristics on the TI99/4A.

Almost perfect video scrolling, the type of interaction between sprite and background graphics that varies from clashes with opposing cars to the use of weapons; and all with the background soundtrack Peter Gunn always active, just like in the arcade game.

Basically Ramsus Moustgaard had created the impossible... His Road Hunter game is the transposition of Spy Hunter and Road Fighter perfectly mixed on the TI99 computer!

This game has in fact set a new standard on the Ti99 of how a car racing game should be programmed. In addition to evaluating the game in its technical complexity: the programming used to exploit multitasking, scrolling and so on, it must be said that it is extremely playable. There are no strange effects in the physics of the movement of cars and it reproduces exactly the style of play of Spy Hunter, as we also have here the possibility to arm our car with a machine gun and to make collisions with the opposing cars to put them out of play with an almost realistic effect of the heel that simulates the impacts.

All this considering the hardware limitations of the video chip tms9918 and generally the architecture of the TI99 which has as maximum memory expansion only 32Kbytes.

In addition, Rasmus has also integrated support for the F18A into the game, which is the improved redesign of the old Texas Instruments tms9929/9918 video chip that increases its graphic rendering in colors and sprite usage and also allows SVGA video output.

You retrogamer fans can try this game using the TI99 Java emulator at the following address:
http://js99er.net/#/

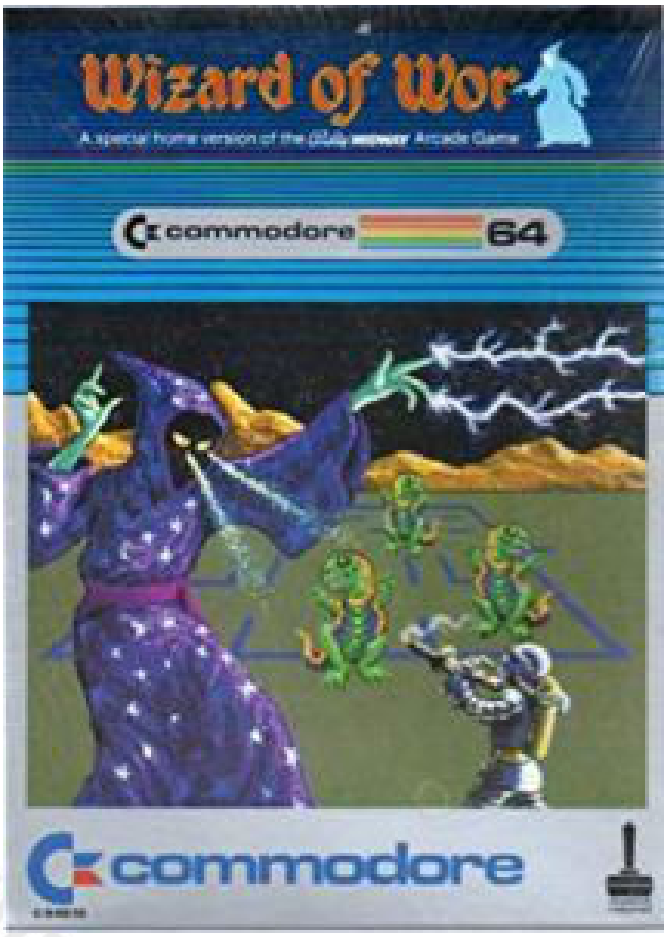
Greetings to all readers and please let us know your opinion, perhaps by communicating your highscore. ;-)

Wizard of Wor – Commodore 64

by Christian Miglio

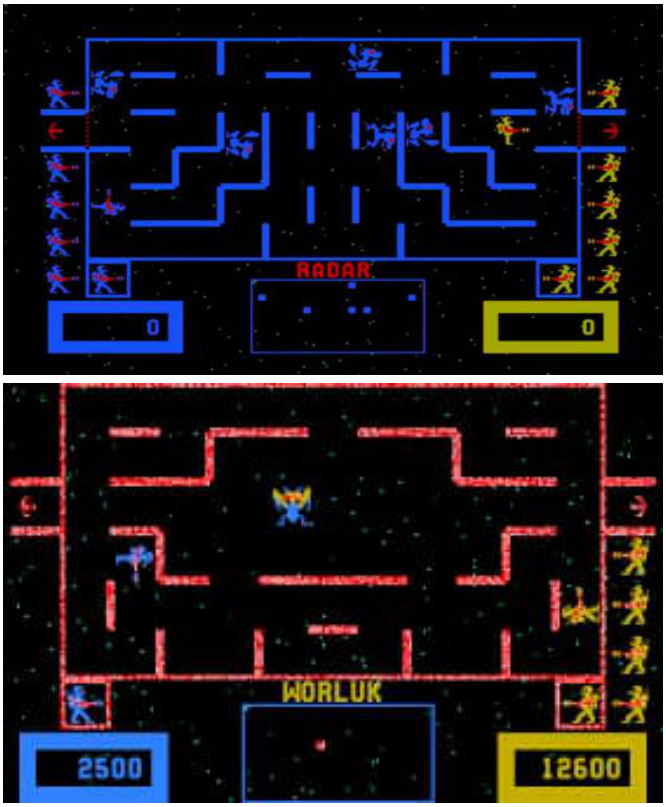
“Come back for more... with the Wizard of Wor. Ka ka ka ka. ” Okay, the game isn't that he actually said "ka ka ka ka”, but the speech seemed a little like cavemen, so laughter sounded like that.

Good afternoon friends of RetroMagazine World, from the dawn of Atari 2600 and 5200 to Coin-op, comes a game that combines fantasy and science fiction set in a futuristic universe, the father king of all laser arenas; ladies and gentlemen today we talk about Wizard of Wor!



Wizard of Wor: Gameplay

Wizard of Wor is an endless game (like many of the games of the time) where the player controls a warrior armed with a laser rifle who together with his companion or alone has to clean a series of fixed-screen mazes full of monsters.
Obviously, our heroes won't be able to fire the next shot unless the previous one hit the target or ended the race against a wall.
The levels are of increasing difficulty, we will juggle through narrow tunnels until we reach the Pit, a completely open and sheltered level.
We will face 5 different types of monsters, each one has its own speed, the first 3 types are minions with variable quantities, in addition to the laser we will have the strategy to use the walls to ambush and a "through door", a side door that allows you to pass from one side to the other of the screen (as in the Pac-Man principle for terraplattists). Warning that even enemies can use them!
At each level after eliminating the minions a Worluk will appear, a kind of bee that can teleport, if killed it will give a bonus and give the chance to make the real boss appear, the fearsome Wizard of Wor, teleporter him too, and killing him our score will be doubled.
If the worluk and the Wizard of Wor escape through one of the through doors, we won't get any points.



Wizard of Wor: Strategies

Minions can become invisible to reappear when on the line of fire, or in the same corridor as our hero.
In addition, we will also have a beautiful radar at the bottom of the screen to help us win.
A peculiarity of this game is that the laser can kill monsters with one stroke, but consequently also our companion of misfortune.
It follows, of course, that we too are vulnerable.

On some levels, a winning strategy could undoubtedly be to stand back to back with your partner to increase survival. This is a game that therefore allows for a cooperative/ competitive mode at the same time, so that we collaborated as long as necessary, after which each game still ended in disgust despite the initial good intentions, normally on the second accidental blow that hit our friend, a war between the two players began suffocated with blasters. Seriously was a great innovation for the time that provided players with self-determination as well as making everything interesting and very long-lasting, it is a game that however is well enjoyed only by playing it with a friend.

Wizard of Wor: Hardware and curiosities

The original arcade game also features primitive speech synthesis and utters several phrases that represent the voice-over of the Wizard of Wor.
One of these is precisely the sentence that opens this article.
The game for Commodore 64 can also boast "spoken" phrases, as it is one of the few software that supports Magic Voice Speech hardware expansion, an expansion that was inserted into the cartridge port and in turn provided a cartridge input as pictured.
Wizard of Wor for Commodore 64 is a title that has been distributed primarily in cartridges.

Final considerations

Wizard of Wor is, in my humble opinion, a small hardware/ software masterpiece that emerged in an era of technological innovations that, at the right price and in the small home environment, could also be revived at home, proof of this is the existence of the Magic Voice Speech.

About the game, on the other hand, it is a game that bases its strength on teamwork and realism, proof of this is precisely the fact that it can be hit by "friendly fire". About the musical section, it is almost non-existent except for a pressing background motif that increases its rhythm with the increase in the speed of the level.

While the musical section is poor, the discourse is different as regards the sound effects, rich, beautiful and impactful, make the idea of being under continuous attack good.

Regarding gameplay, however, some more demanding players may complain of a repetitiveness in the background since in the end the levels are almost always the same, but the fact of being able to play in two certainly gives a different strength and longevity to a title that does not need great presentations for those who have had a Commodore 64.

F-1 Spirit: the way to Formula-1 (MSX)

by Ermanno Betori

Konami had already created her first Road Fighter racing game (featured in the description of the Road Hunter game for TI99/4A) but was not satisfied with its success and wanted to try again to create a better racing game, but could it be done? The computer always had to be the standard one, that is, the MSX1 that with the TMS9929/18 as graphic chip and the PSG General Instrument AY-3-8910 as sound chip, so you had to have the right idea to develop a new game... and the idea came!

The result was F-1 Spirit: The Way to Formula-1 released for MSX in Japan and Europe in 1987, three years after Road Fighter. F-1 was created as a top-down Formula 1 racing game, just like Road Fighter from which it took much as the engine of the game, but adding robust managerial management. In fact, you can customize cars by choosing the engine, the type of wheels, the suspensions, the brakes... thus influencing parameters such as the speed or road holding of the car.

At the beginning of the game we start with standard cars, moving on to rally cars and Formula 3, until we reach that point, which is the final goal of the game: to win in Formula 1. There are six types of races: Stock race, Rally, F3 race,

F3000 race, Endurance race and finally F1 races (with 16 tracks).

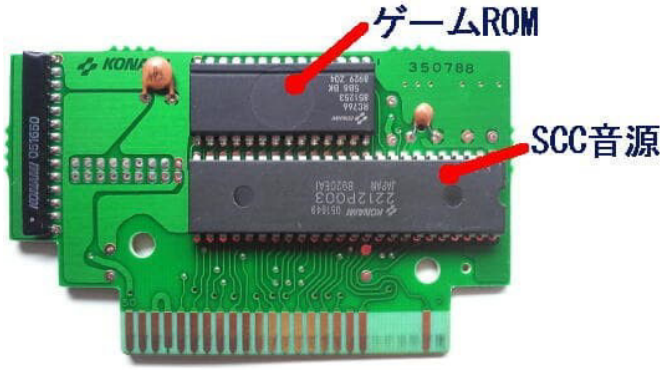
Initially, as already mentioned, you can only run in stock, rally and F3 races. As the player wins the races, he accumulates points that will allow him to play new races. If the player finishes a race in first place, he receives nine points. He gets eight points if he comes in second, etc. If the player finishes tenth or more, he doesn't get any point. This is the game, which has excellent playability and a difficulty calibrated in Japanese style... at the beginning normal, then difficult and to finish (at least for the undersigned) at hellish level.

Konami's genius in creating this game was to insert a hardware upgrade into the cartridge. They had two choices: either improve the sound or video on the computer... They chose the audio. In 1984 Yamaha had created the

sound chip Y8950, called MSX Audio, with which it hoped to create the new musical standard to which all manufacturers of MSX computers would have to adhere. But that did not happen and many companies designed their own audio chip, including Konami in collaboration with Toshiba.

This audio chip was revolutionary compared to others created later, as it was customized by Konami to interact specifically with the MSX computer. This audio chip, which was called the SCC (Sound Creative Chip), had as its technical specifications five wave table channels that completed the three-channel PSG chip on the MSX computer. The SCC had an 8-voice polyphonic effect, not as good as the one obtained using the Yamaha audio chip or others who will follow, but if programmed well it allowed excellent performance especially if inserted into a video game. This happened with F1-Spirit: it was in fact the first cartridge built for MSX to have both the game's Roma and the SCC audio chip inside.

"F-1 Spirit: The Way to Formula-1" was also Konami's most extensive and complex racing game for MSX.



Konami soon afterwards released A-1 Spirit, which was the first MSX game to be sold along with an external

peripheral. In practice, a special version of F-1 Spirit improved, with bug fixes, futuristic cars compared to normal Formula 1 cars and an eye-catching steering wheel including gear shift lever that reminds a lot of the arcade coin-op cabinets of the time.

From the point of view of programming, the game was very complex when compared to the other driving games created by the same software house. It involved several human resources to be completed; the development team consisted of people who made history not only in the world of video games created in Japan.

We have respected people at programming such as Toshiya Adachi (Space Manbow and SD Snatcher), M. Ozawa (Gradius3 and Sunset Riders as lead developer and Knightmare2 and Penguin Adventure as co-developer), Ritsushi Sagisaka (the creator of Quarth).

In the graphic sector we find Hiroshi Makitani (he created Resident Evil 3 and the graphics of King's Valley 2 and Penguin Adventure), T. Shimizu and Tomiharu Kinoshita.

Kazuhiko Uehara (who created some of the most beautiful soundtracks of all time such as those found on Nemesis2, Knightmare2, Kings Valley2, Space Manbow, Metal Gear2, Parodius and many others), Motoaki Furukawa (same thing, dozens of hits but is remembered for the music of Castlevania) and Yoshinori Sasaki (who in 2015 was co-programmer of Resident Evil Revelation 2).

F-1 Spirit 3D Special (MSX2)

F-1 Spirit 3D was the real sequel to the game, released in 1988 for the MSX2 plus computer that was only sold in Japan at the time.

Unlike the original, this game used a third person rear view as in the Pole Position game and the game play was specific only to Formula 1 races.

Like the parent F-1 Spirit, even in this game there is the

management component that allows you to modify your car such as the bodywork, the engine, the colour, the brakes, the suspensions, the wheels, the gears and even the wings!

Finally you can also set the level of difficulty.

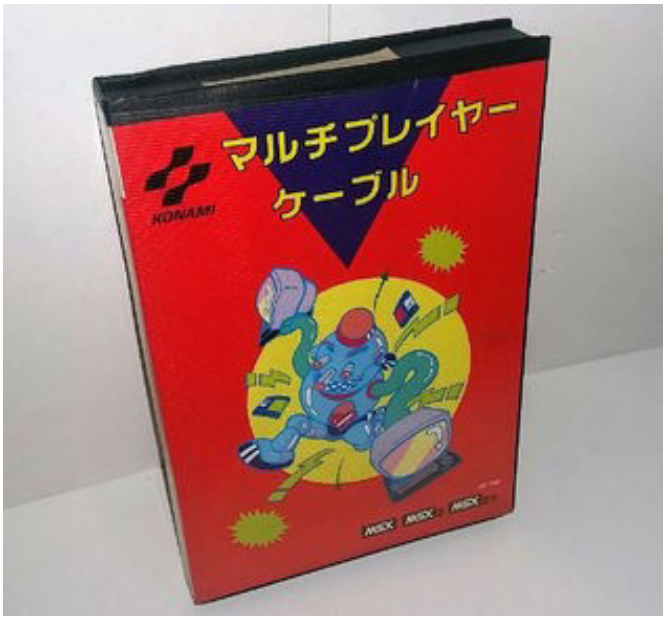
In addition to the classic game style modes such as free run, race, etc., the two-player combat mode was also created that could be used by connecting two MSX2+ computers with a special connection cable, always created by Konami (obviously sold separately), called JE700 Multiplayer Link Cable that was to be inserted into the second joystick port.

F-1 3D was released by Konami on three floppy disks and was the only one Konami developed for the MSX2 plus computer.

Another thing that made this game special at the time was that Konami gave up the SCC as an additional sound chip to use the Yamaha YM2413 OPLL that is present on the FM-Pac cartridge or the MSX2+ and TurboR computers.

Almost all other games developed by Konami on floppy disks that required an additional sound chip were sold with an SCC ROM cartridge such as Snatcher and SD Snatcher.

The game's music was composed by Goro Kin pseudonym Tsutomu Ogura.



The particular packaging (front and back) of the JE700 Multiplayer Link Cable that had to be inserted in the second joystick port and allowed to connect two MSX2 computers!

NEW GAME!!!

TURBO SPRINT

Year: 2021
Developer: McGeezer
Genre: Racing Game
Platform: Amiga AGA

The wait is over! Turbo Sprint AGA has finally arrived (released May 7, 2021).

From the team that brought us the award-winning RYGAR comes this wonderfully faithful version of the classic arcade.

We followed its development on our facebook page and watched the game grow.

Super sprint was one of those iconic arcade racing games of the 1980s that stood out not only for the multi-player cabinet with steering wheels, but also featured a well-balanced gameplay and amazing graphics (for time) with miniature cars whizzing on winding slopes.

The game had been converted to a myriad of home systems, but the appeal lacked the Amiga except for a 2021 conversion derived from THE ATARI ST version (which we willingly forget).

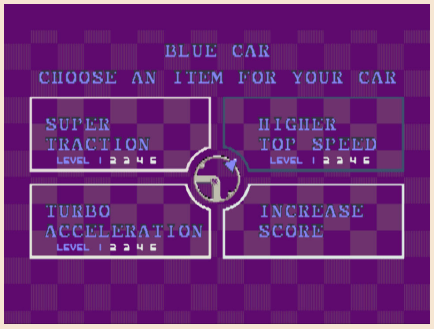
This version is designed to work on Amiga AGA (A1200, A4000 and CD32), available in two editions: digital and physical.

You can order it from the McGeezer channel (https://mcgeezer.itch.io/turbo-sprint).
The game is easy to use (everything is done via fire button and joystick lever).

Each car can be mapped to different game inputs (port 1, 2, keyboard).

Purpose of the game?
Qualify and win!

How's the game going? Well, I guess.



The work of these months with the numerous betas released has meant that the final product is really well played.

Very fluid and fast graphics in any configuration. It runs on both basic and expanded Amiga configurations and has also given excellent results emulated on WinUae.

It can be launched directly or uploaded from Workbench (copying the LHA archive and launching the turbo_sprinte.exe file).

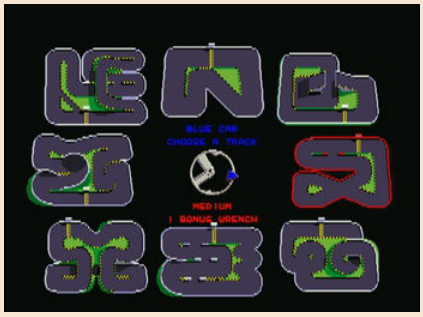
Summing up. A good fun and well developed game, listening to the community of players who helped in the development.
AMIGA lives!

by **Carlo N. Del Mar Pirazzini**

OUR FINAL SCORE

» Gameplay 85%
Same as the bar, but better from a control standpoint. Plays well in singles, doubles and even foursomes.

» Longevity 70%
Fun, but like the bar game suffers from boredom in the long run.



TURBO SPRINT
EXCLUSIVE
4 Player Support
AMIGA
A1200 | A4000
TURBO SPRINT
Turbo Sprint!
From the team that brought you 2019's award winning Rygar comes a new top down racer for the Amiga AGA platform.
With exclusive 4-player support, you'll need to race to the finish line to beat your opponents and take your place on the winners podium while collecting upgrades and avoiding hazards across 8 challenging circuits and 32 levels.
Strap in, buckle up and drive fast as this high octane racer will push your driving skills to their very limits!
CREDITS
AMIGA
GRAEME COWIE (Game Programming)
KEVIN SAUNDERS (Box Art)
MARTIN ERIKSSON (Music & Sound FX)
TONY AKSNES (Game Testing)

SAINT SEIYA – IL MITO
KNIGHTS OF THE ZODIAC!!!

GAME PREVIEW

This amateur video game project really got me involved!
Like so many of us, as a child I followed the deeds of the knights on the TV, the Knights of the Zodiac adventures and partners against evil, the challenges of the golden knights. Ades... What a beauty!

In Japan, some experiments for Famicom and Super Famicom have been released over the years, almost all of them unsuccessful and in a language that is not understandable (obviously for those who do not speak Japanese).

Luckily there is this Italian experiment. We thank Davide Rufini for contacting us and allowing us to try this project. Saint Seiya "Il Mito" is a 16-bit style graphic adventure/gdr created on PC and Android developed with RPGMAKER 2003.

It is a project created for the fun of fans by a group of fans of the television series and manga. A non-profit project, all the material developed by the group is for free use (provided that all rights are owned by TOEI Animation and Namco Bandai).

The version on the site that I will link you to at the end of the article is still THE DEMO version, the subsequent parts are still under development.
The demo we tested covers the first 3 chapters of the game and the prologue (which is a long introduction and a game tutorial).

The game develops in two ways. The exploratory part that recalls the many gdrs from above Japanese and the combat part.

The heroes present have the differentiated characteristics in life points (HP) that start at 100 up to a maximum of 150, energy (EN) that can reach a maximum of 10 and is expandable, attack (ATT) or the ability to damage an enemy both by punch and by special blow.

Then we have the defense (DIF) or the ability to resist the opponents and their blows, the dexterity (Des) that will allow us to hit or dodge and, finally, THE SPECIAL BLOWS characteristic of the knights.
All this in the best style of classic gdr.

The demo includes:
- Prologue: tutoring and story
- Chapter 1 - "The rebirth" (training, galaxian wars and armor theft)
- Chapter 2 – "The Black Knights" (should I explain?)
- Chapter 3 – "Helmet Fight" (Morgana, Docrates, Flame and Ice Master).

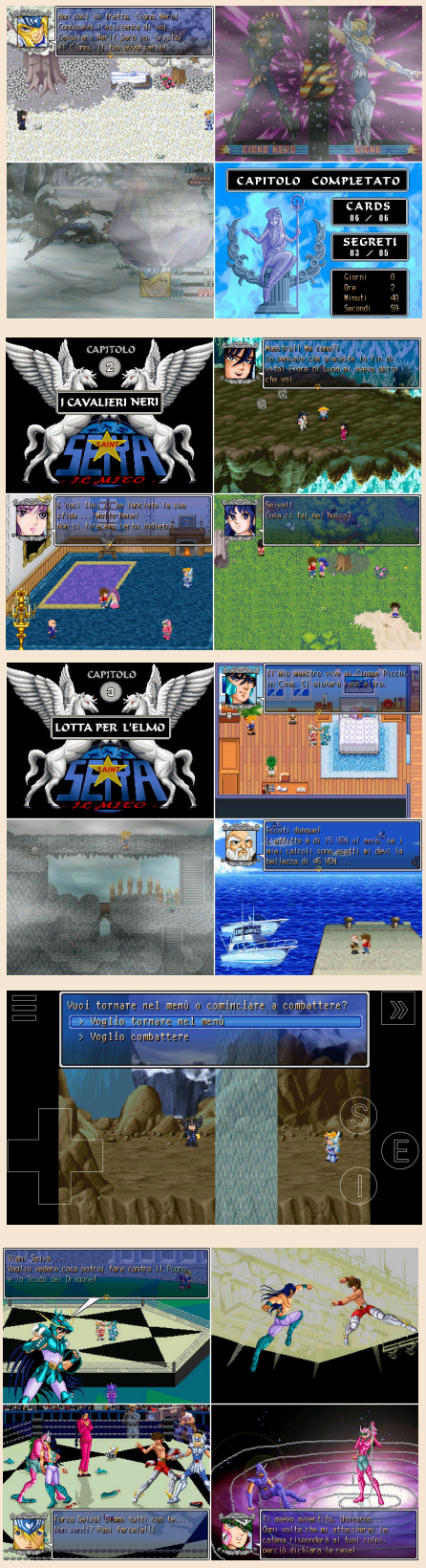
Personal opinions. The game is very promising. Well developed technically and lets you play well. The tutorial guides the player very well and the level of difficulty is optimal.
We look forward to seeing how the development will proceed and invite you to participate as a tester by helping the developers.

Kyaaaaiiiiiii!!!

WEB site: http://kingseiya.simplesite.com/
FB page: https://www.facebook.com/saintseiyailmito/
YouTube: https://www.youtube.com/channel/UChfCx8hvV_TdrzShrsWbYAQ/videos
Instagram: https://www.instagram.com/saintseiyailmito/?hl=it

Server Discord: https://discord.gg/S3rVxDHC

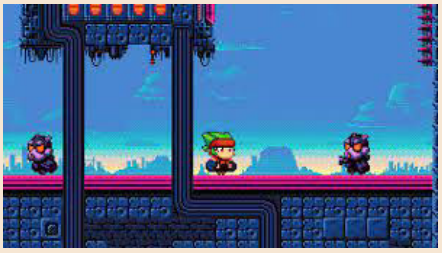
by **Carlo N. Del Mar Pirazzini**



NEW GAME!!!

PHANTOM GEAR

Year: 2021
Publisher: Megacat Studio
Developer: Bits Rule
Genre: Platform game/Action
Platform: Sega Megadrive



A good game!
This is exactky the feeling that you prove playing with Phantom Gear for Mega Drive.

It is a lateral sliding platform that mixes arcade action gameplay from the old school with some dynamics typical of modern MetroidVania.

The plot will not be the most innovative one, but the game is undoubtedly well developed and very intriguing.

It is very reminiscent of Wonderboy in Monster World as game dynamics, but it also has a lot in common with games like Metroid.

We can then enhance the skills of our hero with experience, explore the vast levels in search of secrets and treasures.

Beside this there is also the old-fashioned platform component that we like so much.
A beautiful adventure.

The game is available in two versions. The classic digital download version available on the MegaCat Studios website and the physical version that contains the game cartridge, a beautiful colorful manual and a really remarkable artwoork.

The cost is 41.95 euro and is currently restocked on the site (it has undoubtedly been very successful).

by **Carlo N. Del Mar Pirazzini**

OUR FINAL SCORE

» Gameplay 75%
Excellent control system and skill advancement.

» Longevity 80%
It will keep you busy enough and entertained, with the classic style of MegaCat Studios' games.

EARTHBOUND

Year: 1989
Developer: Hal Laboratory/ Nintendo
Publisher: Nintendo
Genre: Role Playing Game
Platform: Super Nintendo/ Super Nintendo Mini

Shigesato Itoi is a genius! A game design genius. Earthbound is full of his genius.
In 1989 he invented the story of an alien kidnapping (which really happened to his grandparents!) with protagonists an extraterrestrial named Giygas and a married couple, George and Maria.
The couple are kidnapped by the Starmen and taken to Giygas' spacecraft, which only wants to meet them.
Among a thousand incredible stories it turns out that Mary is for the alien like a mother, George steals the powers of the Starmen and releases them to Earth.

This is what we have known since the first in the Earthbound saga (called Mother in Japan).

Years after this kidnapping, a meteorite falls to earth in the city of Onett in Eagleland, near the home of young Ness.
Angrily, the boy goes to discover the meteorite and meets Buzz Buzz, a small bee who says he comes from the future and crowns Ness, along with three other friends, as the chosen ones to save the world from Giygas, returned to get his revenge.
To do so, they will have to find the eight shrines scattered around the world and learn the melodies that will give them a chance to confront aliens.

What exactly is this Earthbound? It's actually a Japanese role-playing game almost identical to any Dragon Quest in Snes era. Similar game structures, with explorations through a vast world, with turn-by-turn combat, level growth;

all very classic, mah...
There is a gigantic mah that has elevated the game among the most loved of all on Nintendo platforms, the concentration of incredible irony, the comic scenes and the various and absurd situations that keep the player glued to his pad to see what happens in the course of history.

The combat system is beautiful and deadly: while exploring the various settings you come across enemies that are visible on the screen, touching one starts the fight, if the enemy is turned away you will have an advantage to attack during the turn regardless of the character's speed stat, as well as having 100% chance of escape.

If you are caught by surprise, you will not be able to escape and you will have to suffer an attack during the initial turn. Once the enemy is engaged, the battle screen will be displayed in person, consisting of a dialog box at the top, the animated image of the enemy in the center and the statistics inside an ODOMETER at the bottom. The peculiarity of this odometer is that it always turns when being attacked.

The game belongs to the series of games that arrived late, towards the end of the Super Nintendo's life. In fact, only thanks to the recent arrival of the Super Nintendo Mini can we enjoy the English version of the game.

A very well aged, current and fun game that will drag you into history. If you love Toriyama nonsense and Japanese crazy stories, you'll love it.

It also has a really impressive soundtrack that is the cherry on the cake of a perfect product of its kind. At the top of the gdr on Snes with Zelda, Chrono Trigger and Secret of Mana.
Vast and hilarious!

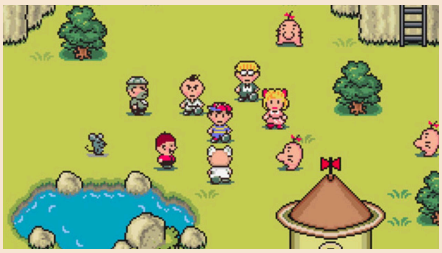
It worths a try, Bardo's word.

by **Roberto "Il Bardo" Pirazzini**

OUR FINAL SCORE

» Gameplay 95%
A perfect character management system, well balanced fights that together with an immediate learning of the dynamics put it in the mount Olympus of role-playing games for Snes.

» Longevity 90%
You will love its vastness and its many crazy stories.



NEW GAME!!!

BATTLE AXE

Year: 2021
Developer: Numskull Games
Genre: Hack & Slash
Platform: Pc Windows and console NG

Wait a minute...
RetroMagazine World reviewing new games?

Shame on us!!!

And why should we be ashamed? This Battle Axe is an absolute tribute to our beloved retrogaming world.

A tribute to those masterpieces we used to play as kids.

A game that reminds us of Gauntlet, Golden Axe, Rastan... and even The Chaos Engine.

A game that runs on the new platforms but could easily be “carried” on the old 16-bit consoles (e.g. the development team is thinking of a demake on Super Nintendo and Megadrive).

Stop apologising! Battle Axe is the kind of game we've wanted for a long time. A fast, frantic game, which does not impose very long video scenes, exhausting tutorials with absurd explanations.

You enter the game, choose your favourite character and free the Fantasy kingdom of Mercia from the domination of the witch Etheldred.

That's enough!! Simple and linear. Directional cross and four buttons to manage the character. First one for the hand-to-hand combat, the second button fires, the third uses the special shot, and the last can use a spell.

A touch of class at the end of each level, as we rest, comes the merchant witch who will offer us her services and enhancements (so the more we massacre and earn coins to increase our powers).

Three different characters. A warrior armed with a gun. Not fast, but very strong. A gnome wizard, not very

OUR FINAL SCORE

» Gameplay 90%
Three well-characterized characters, great control system and a well-balanced difficulty.

» Longevity 95%
Every time you turn on your pc/ console, a game will take place. To improve your game score, to see new scenarios or simply to upgrade your character. Unbelievable.

skilled in hand-to-hand but with an excellent firing spell system and finally the dark elf; fast, fast but not very resistant.

What more can I say? Nothing... It's already perfect.

Wonderful pixel art. Amazingly animated, colourful and always very varied. Exciting soundtrack.

This game also has the bad habit of keeping us glued to the pad for hours and getting replayed every time we have a free moment.

This is the spirit of the arcades of the "golden years". Battle Axe is full of them. Buy it and play with it.

You will not regret it and you will feel like you are in the 80s, 90s, 2000s or even in these... and you will have fun like crazy!

by **Carlo N. Del Mar Pirazzini**

SOKKO SEITOKAI: SONIC COUNCIL

Year: 1998
Editor: Banpresto
Genre: Beat em up
Platform: Sega Saturn

In this issue Takahiro (dear friend and collaborator of RMW) spoke about the Sega Saturn, explaining its history, life and the best titles.

Taka sent me the iso of this game to test for a review. It belongs to those titles unknown to the public that have had a good success in Japan.
A special title.. a beat em up for... girls!!!

Well, Sokko Seitokai is one of the very rare games aimed at female audiences. Typically these products have a “bad reputation” in the gaming world. Yet this Sokko is intriguing and well made. It certainly presents some problems here and there, but it's a fun combat game for anyone looking for something fast, furious and funny on this console. History. It all starts with the manga. Yes, because Sokko Seitokai was a manga before it was a video game. It was produced by Banpresto under the watchful eye of Gamest, a company that made manga shojo in Japan based on video games in the 90s.

I'm not sure enough about the real story of the game, unfortunately I've never read the manga. From what I understand, everything revolves around a martial arts tournament and the main character, Ai Honda, wants to win it at all costs. She is the typical teenager of souls and manga, reckless with her head in the clouds. He thinks he has a lot of incredible strength and magical powers, but he discovers that it will be harder than you can imagine going on in the competition.

For a game focused on women's combat, we will find very few such clichés. No succinct dresses, necklines, shivering décolleté, “cute costumes.” You punch each other in the face here, but you do it seriously.
If you're looking for “ignude" women, you can always look for Dead or Alive saga.

The game features 2d graphics that are really well crafted for the Sega Saturn's capabilities. The 2d in this console was impressive. Perfectly animated, fluid, rich in detail and moving fast. A game that, if imported and translated, would have been successful for its graphic appearance also in Europe. Beautiful backgrounds. Really a pixel art gem.

There are also several graphic effects that are activated when certain conditions called heat waves are reached. That is, when the fight bar is at its maximum and we can use the special shot. Remarkable.

The audio compartment is flawless. Much spoken (in Japanese) and a good soundtrack typical of hard knocks.

Let's talk about gameplay. Sokko stands on the border between "old school fighting" and "new style fighting". Combos are encouraged, the frame count is high compared to other Saturn games and the roster is very balanced, at least until we reach the final boss (which we can unlock later). In this case the level of difficulty is inhumane. Painful notes, though. Some characters are quite simple to beat once you understand the pattern to use, the roster is balanced but does not have a wide choice compared to other games of the period. This will certainly lead to mastering all the techniques of the characters in a short time, also bringing boredom.

Another of the most obvious problems concerns the collision between sprites. At times she appears confused and often seems to lack frames. Maybe a few things have been left out to get the title out. That's too bad.

However, Sokko Seitokai is a good game. Perhaps not the best of its kind on Saturn but a pleasant discovery and a little gem that I recommend to all of you. A couple of curiosities. Gamest included victory and loss rankings in their magazines at the time to increase player competitiveness. He even inserted entire fights of the game's buyers into manga numbers.

The game is also available in physical format compatible with the Saturn NTSC and you can find it at "human" prices on ebay.
I tested it on an emulator, and I tell you it's really good.

by **Carlo N. Del Mar Pirazzini**

OUR FINAL SCORE

» Gameplay 80%
Easy to manage and well featured in the moves and roster.

» Longevity 70%
Strange... You'll quickly learn the play style and the opponents are also easy... except for the final boss. Inhuman!

NEW GAME!!!

SPEARHEAD

Year: 2020
Developer: Alf Yngve
Genre: Horizontal Scrolling Shooter
Platform: Commodore 64

Whoa! Whoa! If they'd told me in 1982, I wouldn't have believed it. The computers that in those years laid the foundations for the history of computing as we know it, today are even more alive than ever: in our hearts, on the machines of thirty years ago (perhaps polished through some wise electronic repair) or more simply thanks to the emulators that from arcade games of the 80s to the most recent 3D systems, actually make video gaming history within reach of all owners of a PC but also of dedicated consoles.

We can then choose whether to relive the pearls of the past by retrieving the images of the original discs and cassettes or set off to explore the present where thousands of fans on the net enjoy today as they did yesterday in the creation of brand new video games made specifically to be played on printed circuits conceived over 30 years ago.

This is the case of this adrenaline Spearhead, a horizontal scrolling shooter made by Norwegian Alf Yngve, a video game made with SSEUCK (sideway shooting 'em up construction kit) ranked second in the 2020 C64 SEUCK Compo. I remember that the SEUCK was software developed by Sensible Software able to create vertical scrolling shooter on C64 but also on Amiga and other systems of the time while the SSEUCK is a modified version of that software that allows the development of horizontal scrolling games.

Adrenaline, huge sprites able to get the most out of the hardware of your breadbin and above all a great playability with the consequent ability to keep us glued to the screen of our Commodore even today! The spacecraft at our disposal is equipped with a horizontally boostable shot (no bombs to drop like in other shooters of this type) and with the aim of achieving the maximum score we will have to fly over a series of islands where each building will prove to be a threat: missile launcher turrets, immense range cannons, UFO and more!

Our plane will respond surprisingly well to commands so at first the situation will seem easy to tame. Proceeding along our path of destruction, however, we will understand the need to perfectly calibrate every single movement both to avoid collisions with buildings and to avoid fragmentation devices capable of taking a considerable slice of our vital space.

As mentioned before, our shot can be enhanced by collecting several floating power-ups, but just like in beautiful old games, our skill and precision will allow us to obtain star scores. Sperhead is therefore, in my opinion, a game created in 2020 for Commodore 64 that is worth trying and to do so the options are certainly not lacking.

The author, from the official page of the game, in fact allows you to download for free the file to feed to our favorite emulator and for the hasty ones has thought well to implement the execution of the game also through the browser! What are you waiting for?

Official site (freeware game)
http://richard-tnd.itch.io/spearhead

C64 SEUCK Compo 2020 Page
http://tnd64.unikat.sk/Seuck_Compo_2020.html

by **Flavio Soldani**

OUR FINAL SCORE

» Gameplay 92%
Fast, big sprites, great playability proving that the c64 will never die.

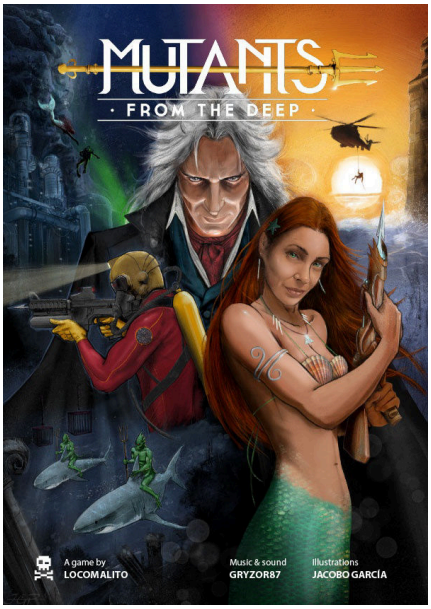
» Longevity 90%
A game that pushes you to do better and better to achieve higher scores.

NEW GAME!!!

MUTANTS FROM THE DEEP

Year: 2021
Developer: Locomalito
Genre: Shoot'em up
Platform: MSX

The dynamic duo! Locomalito and Gryzor98 (with the help of Manuel Pazos and Fernando García) have produced a jewel game for the first generation MSX systems.



A multidirectional shooter (the protagonists can shoot in eight directions) where we can drive a diver or a siren and shoot down a mutant threat emerging from the depths of the sea. The diver Marcelo has more life points, so he can withstand more impacts than the enemies, but in return he is slower and can last less time without oxygen.

Marila, the siren, is faster and lasts longer without the need for air bubbles, but has very little resistance to damage and this means you will have to be particularly precise with her.

A shooter with a slightly different look and an innovative game mood in which precision is rewarded in the face of the desire to end everything that appears on the screen.

The possibility of shooting diagonally and the speed of the enemy shots, as well as his crazy sense of timing, makes it particularly advisable to move well and position yourself even better to avoid damage, before going crazy to shoot. Graphically it is at a spectacular level for the machine, with detailed settings, mysterious figures populating the backdrops, corals and a very well used color palette. Obviously, the usual Gryzor98, has created vibrant melodies, full of energy and with a mysterious touch essential for an underwater theme game, a soundtrack that encourages us to start again and again.

The game will be released today 13 May on MSX and on 27 May the PC version will be released. It is compatible with MSX, MSX2, MSX2 + and MSXTurboR systems, and can be perfectly reproduced in any emulator such as blueMSX or via online emulators.

A physical version made by the friends of Retroworks will also be available.

"Mutants from the Deep" is a small arcade delight that will excite both the hardcore MSX system fans and the lovers of classic video games in general, a different shooter, with its own rhythm and with that special flavour that we retrogaming lovers look for in the new niche productions.

It surely deserves a gold medal.

by **The Masked Editor Jr.**

OUR FINAL SCORE

» Gameplay 90%
A product in the style of Locomalito and co. Great control system, dynamic action and never punishing.

» Longevity 90%
A product not very long but that will keep you glued to the screen and the joystick of your MSX. Strongly recommended.

NEW GAME!!!

JUMP OUT

Year: 2021
Developer: Vector Games
Genre: Puzzle game
Platform: Commodore 64

We are having a wonderful time! Maybe better than the '80s themselves. O_O

Think about it...
We have at our disposal (original or emulated) all the computers that we could then only wish for. We have all the software developed in the 1980s and 1990s at our fingertips... And above all, a lot of it is still produced today, with techniques that at the time we could only dream of. But not only that, all that good is very often free and usable by all. This is the case of the title I want to present to you today: Jump Out.

Jump Out is a 2021 puzzle game developed by Vector Games and released for free to the public.

In the game, with a view from above, we play a funny marble, which we will call Steve. Steve is an absolutely ordinary person who has no special needs. All he wants to do is going to work every morning. Seems simple, doesn't it?

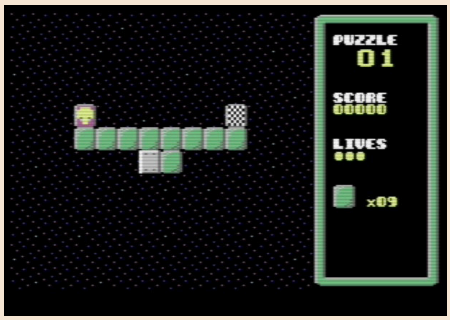
Unfortunately, the pension system is trying in every way to save on salaries and Steve is one of the victims of this scam system. If Steve does not show up for work every day, he will lose his pension entitlement, so to make this task as difficult as possible, Steve's home-work journey has become a real puzzle.

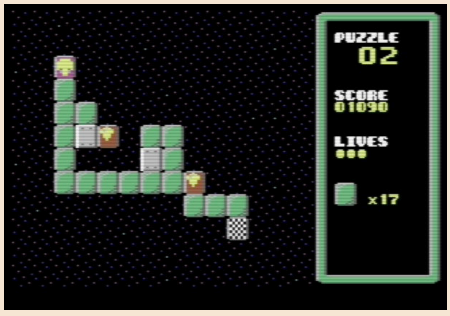
We all have to take the car or a combination of public transport to get to our workplace. Steve, on the other hand, can easily roll to his office. All you have to do is complete the home-work path by passing over all the green tiles. You know when you pretend to have to step on all the tiles in the house or in a square without going over them twice? That's right! It's the same thing Steve has to do. You have to go over all the green tiles to make the office door open.

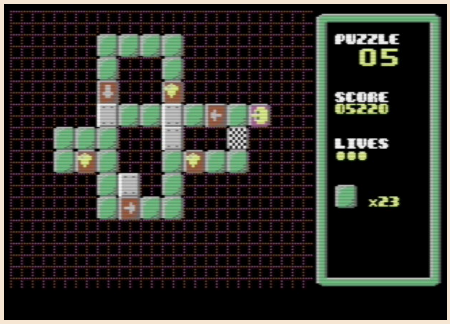
Careful though... The green tiles, once stepped on, will disappear into thin air, preventing Steve from going back in his footsteps if a tile was accidentally blown.

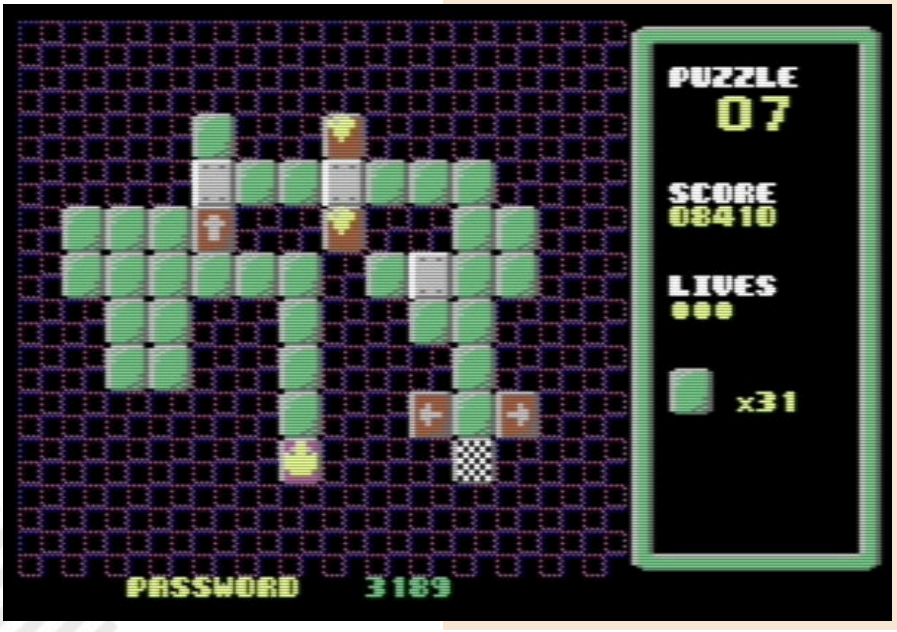
The layers of the game are designed in such a way as to make the transition operation on the green tiles increasingly difficult. From the first levels of warming, we will soon find ourselves faced with some maps in which we will have to calculate our moves in advance, to avoid failing the level or, worse still, getting trapped. In that case, we'll have to kill ourselves and start over.

There are also a couple of special tiles that, once stepped on, will have a particular effect:
- teleport: Steve will be teleported from one place to another on the route









- forced direction: Steve will have to move in the direction indicated by the arrow

These tiles are used on maps to complicate Steve's path. I told you, public finances are collapsing and the need to save is high!

Technical implementation:

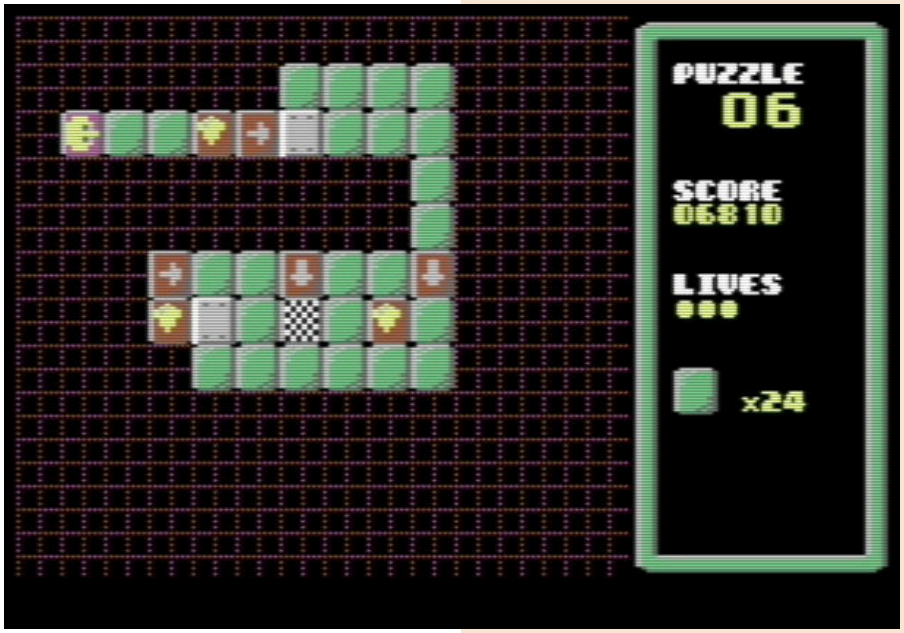
Steve's movement is fluid and well animated and the graphics are well designed and functional to the game. There is no music at stake, just a nice sound effect to underline the movement from one tile to another. Those who know me know that I appreciate this choice.

The first levels are really simple, but already from the fifth we have to understand that to complete the level it is necessary to do a certain thing. It took me a few seconds to figure it out, but then it was all clear. Obviously I don't spoil you... But you'll figure it out for yourself.

Unfortunately that's the problem with Jump Out! The game is immediate and easily intuitive. There are 30 levels to complete, but once you understand the game mechanism, it will take you very little time to complete it. Personally, I think I finished it in less than an hour, and it's not like I'm really an inveterate player...

So the immediate game mechanics and the simplicity of the maps make the game all too easy and not a challenge for anyone looking for a puzzle like they used to be.

I suggest you try it anyway. Once you have started you will want to see and complete all 30 maps. Unfortunately, once you're done, you're hardly going to play it again, or at least not right away. Special mention for the convenient code system that will allow you to restart from the last completed level!



Where to get it:

You can find the game on CSDB:
https://csdb.dk/release/?id=203698

by **Francesco Fiorentini**

OUR FINAL SCORE

» Gameplay 80%

Very playable and enjoyable. The ball moves without hesitation and the levels are well designed and attractive. Once you start playing it, you'll want to see the end!

» Longevità 60%

Thirty maps... It seems like a lot, but it takes very little to master the game and finish it. Once finished, unfortunately, you will not pick it up again immediately. Maybe you will be tempted to play a game every now and then...

LIGHT FORCE

Year: 1987
Developer: FTL-Faster Than Light
Genre: Shooter
Platform: Commodore 64

Commodore 64 also means shooters set in different galaxies that I used to snort as a child, perhaps because I thought they were repetitive. Or maybe because there were too many for my taste. Without taking anything away from masterpieces such as Nemesis, Gyruss and other conversions very well made for this and other platforms.

Maybe I'll be repetitive if I say "newsstand software tapes" (it's not an incitement to piracy back then!); Yes, because one day my mother returned from work with a pile of cassettes given to her by a colleague, or rather by the son of the colleague who probably had too many around the house. I don't remember what series they were part of and that night I just had time to try the first game of one recorded on both sides.

A game of spaceships happened to me and despite my adversity in the genre I decided to play it anyway since the music was quite relaxing and engaging.

Without using too many words, the game was Lightforce and as I just said it had great accompanying music as well as good gameplay and a sense of challenge.

The sliding is vertical, you always have the same infinite ammunition with the double cannon not modifiable and no upgrades for the spacecraft except a smart bomb.

Levels are subdivided by base, that is, after facing meteorites, spaceships and enemy base complexes, we will have to destroy a complex at the end of the level before moving on to the next, not very difficult task...

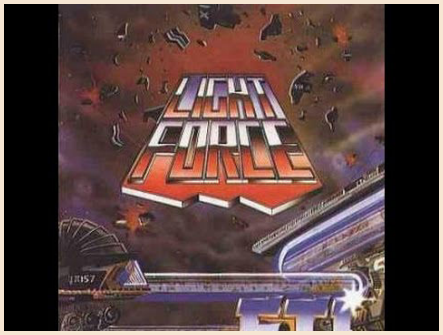
And so on until the gameover, since the game is repeated endlessly with increasing difficulty after each end, not too compromised thanks to the extra lives that we can earn honestly.

The gameplay should not last long but the desire remains endless and it will also be fun to play with some friends challenging each other to points(I often challenged my cousins) and the excellent soundtrack will not make you easily detach from the screen.

It will have taken me twenty years to find the real name of the game and here it is thanks above all to the passion that has overwhelmed us for a few years and made us find it on social media, so in addition to reviewing it I can also recommend it to those who let it slip away or to those like me who were still looking for it without knowing the name.

This in my opinion will be a worthy opponent of the well-known converted arcades and beyond...

by **Daniele Brahimi**



OUR FINAL SCORE

» Gameplay 80%
Easy and intuitive.

» Longevity 90%
Many challenges and endless hits await you!

You may play, but then you ought to break everything!

commodore
COMPUTER CLUB
Come costruire un videogame
Gestione archivi su disco
Le finestre nello schermo
Nuovi programmi per la scuola
5 giochi originali per Vic, C16 e C64

Some time ago I was reading again an old editorial written by the legendary Italian journalist Alessandro De Simone for the equally legendary (at least in Italy) Commodore Computer Club magazine. The editorial was entitled "Giocando s'impara" (i.e. “Learning by playing”) and, left aside a few considerations based on the historical moment in which that particular issue (for the record, it was no. 20, May 1985) came out on newsstands all over Italy, one can't help but find a certain degree of modernity in the central topic addressed in that piece: playing passively or learning by playing.

In 1985, after only 20 issues, the magazine “CCC” needed to present its readers with increasingly sophisticated software programs, because of the ever-increasing demands by readers. But this project clashed with the inadequacy of paper as a suitable medium for publishing long sources and commented code listings. The alternative, even if more expensive for both the publisher and the readers, was to publish/purchase separated magazines (in this case belonging to the same publishing house) equipped with ready-to-use cassettes (i.e. tapes, mind you, not yet floppy disks because drive units were still too expensive and thus not very common). These tapes included simple utilities or complete games entirely written in machine language, whose sources were frankly useless to publish in a magazine because they would have taken up dozens of pages and would have had to be typed by the readers on the target computer to be saved and tested. And we know very well that out of hundreds and thousands of lines of code, it would have been easy to introduce even a single error by mistake or inattention, that would have compromised the very functioning of the program.

CCC is one of those magazines taken as a model by the RMW editorial staff, both for its educational approach and for the balanced distribution of its contents, which we always try to emulate selecting game reviews, hardware tests and articles dedicated to software programming. In that editorial, CCC’s manager confirmed the choice of aiming at presenting programs that were short but at the same time useful and understandable, publishing simple but playable games and showing code able to exploit a certain hardware feature of a system. In short, their idea was to pursue a substantially didactic editorial line and try to entice readers to "break" the listings they had just typed in, in order to make improvements and changes, add new game levels and above all learn by playing with code.

Since the beginning, we at RMW have been trying to (immodestly) follow the same editorial line, also with the releases of the project called “Press Play Again”. In the last few years, retrocomputing is experiencing a certain renewed youth and this leads many young people to approach this magical world made up of computers relatively simple to program, but certainly fun to use. That’s why on every issue of RMW, besides many game reviews that we invite you to play again, you will always see full listings of games, programs, utilities and small/big hacks, that we encourage you from now on to "break through", to see (as said in Alessandro's editorial of 36 years ago) what it contains and how it’s done. Sometimes learning how to make games is more fun than playing them!

David *Cercamon* La Monaca

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